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DRAFT PROJECT IMPACT REPORT

BOSTON CROSSING

BOSTON, MASSACHUSETTS

MAY, 1989

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CAMPEAU MASSACHUSETTS, INC.
ONE AVENUE DE LAFAYETTE
BOSTON, MASSACHUSETTS 02111

Peak Hour Turning Movement Counts

#1291

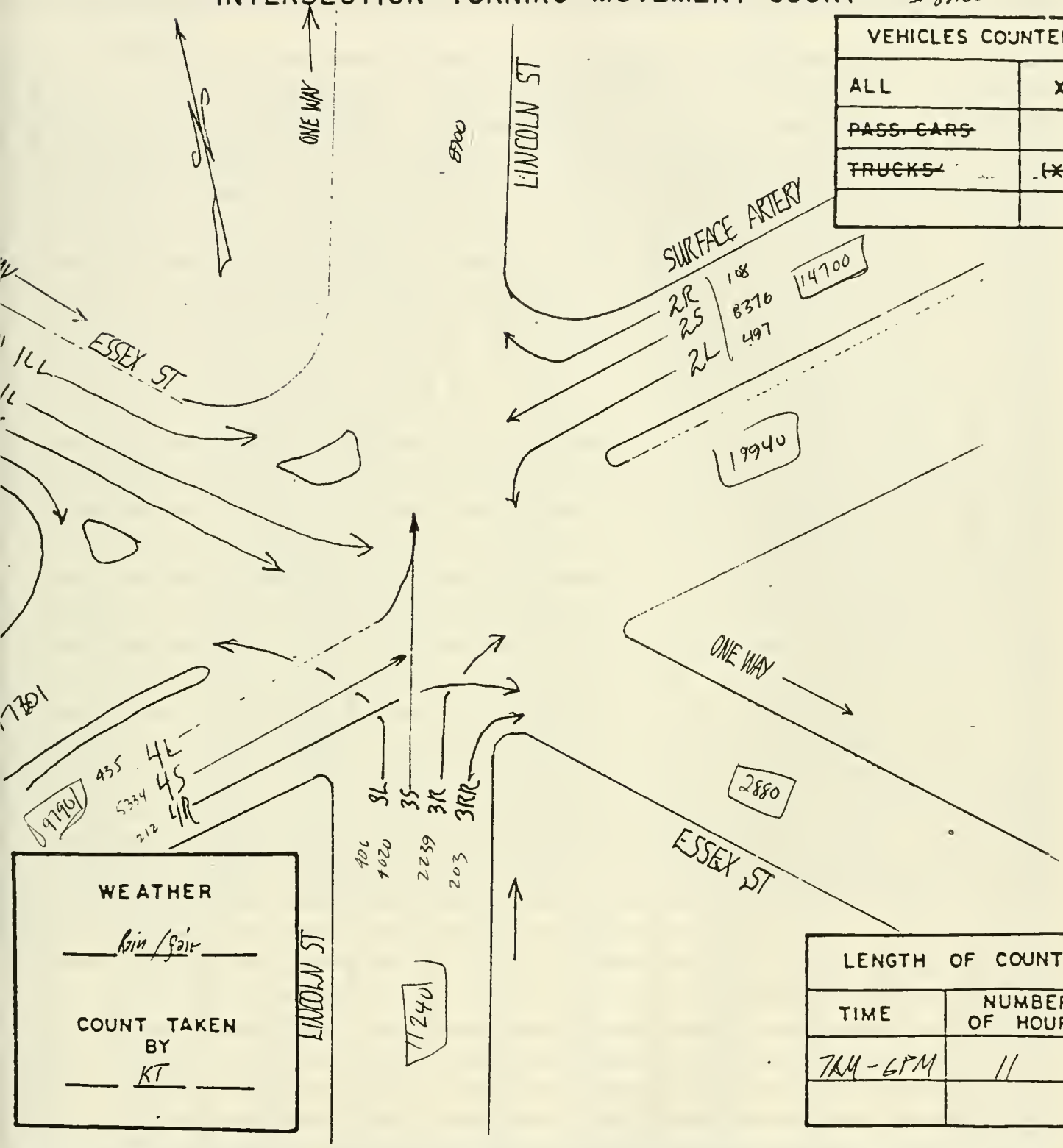
INT. NO.

INTERSECTION Essex, Lincoln & Surface Artery City Proper

DATE 3/14 & 16/88 DAY OF WEEK M/W

INTERSECTION TURNING MOVEMENT COUNT #88166

VEHICLES COUNTED	
ALL	X
~~PASS. CARS~~	
~~TRUCKS~~	~~(X)~~



WEATHER
Rain / fair
COUNT TAKEN BY
KT

LENGTH OF COUNT	
TIME	NUMBER OF HOURS
7AM - 6PM	11

STREET		ENTERING VOLUME	FLOW PERCENT
1) Essex St	Eastbound	8109	27.08
2) Surface Artery	Southbound	8981	30.00
3) Lincoln St	Northbound	6868	22.94
4) Surface Artery	Northbound	5981	19.98
		29939	100.000

COMMENTS

STA NO

TRAFFIC MOVEMENT SUMMARY TABL

LOCATION Essex St - Lincoln St & Surface Artery CITY OR TOWN City Proper

DATE 3/14+16/88 DAY OF WEEK Mon/Wed WEATHER Rain/Fair RECORDER KT

88166

TIME STARTS	Essex St. Eastbound				Surface Artery Southbound			Lincoln St Northbound					TO HALF TA
M	1LL	1L	1S	1R	2L	2S	2R	3L	3S	3R	3RR		
7:00-7:30	30	129	16	34	4	216	9	15	252	80	6		-
7:30-8:00	81	180	24	35	30	281	3	14	225	101	4		
8:00-8:30	33	248	59	51	44	405	4	36	390	137	15		1
8:30-9:00	44	151	17	57	28	330	8	34	303	147	17		1
9:00-9:30	26	162	41	53	23	256	7	27	288	119	11		1
9:30-10:00	31	156	35	72	18	308	5	19	233	88	7		
10:00-10:30	48	219	32	93	26	331	2	18	197	73	2		1
10:30-11:00	59	302	66	118	22	444	4	22	186	131	14		1
11:00-11:30	28	217	22	103	21	408	3	10	135	60	13		1
11:30-12:00	24	324	21	79	33	375	6	23	121	52	15		1
12:00-12:30	21	161	24	59	17	303	2	13	119	51	8		
12:30-1:00	34	202	32	74	30	391	4	19	204	111	13		1
1:00-1:30	29	180	40	69	19	298	6	25	141	77	9		
1:30-2:00	36	195	27	55	27	313	5	8	166	93	14		
2:00-2:30	27	188	35	48	28	367	5	20	188	69	14		
2:30-3:00	30	174	47	22	16	388	6	14	126	104	7		
3:00-3:30	31	210	61	33	10	492	5	22	197	140	7		1
3:30-4:00	47	213	76	102	28	403	7	11	148	161	6		1
4:00-4:30	48	211	62	121	22	389	6	12	113	139	5		1
4:30-5:00	56	262	37	144	15	622	4	21	99	91	4		1
5:00-5:30	66	218	39	150	20	555	3	13	101	116	8		1
5:30-6:00	42	305	31	215	16	501	4	10	88	99	4		1
6:00-6:30													
6:30-7:00													
7:00-7:30													
7:30-8:00													
8:00-8:30													
8:30-9:00													
9:00-9:30													
9:30-10:00													
10:00-10:30													
10:30-11:00													
TOTAL	871	4607	844	1787	497	8376	108	406	4020	2239	203		GRA TOT
TOTAL OF L S & R													239

STA. NO. __

TRAFFIC MOVEMENT SUMMARY TABLE

ATION: Essex St, Lincoln St & Surface Artery __ CITY OR TOWN City Proper ___

TE 3/14+16/88 __ DAY OF WEEK Mon/Wed __ WEATHER rain/fair RECORDER KT 2 of 2

#88166

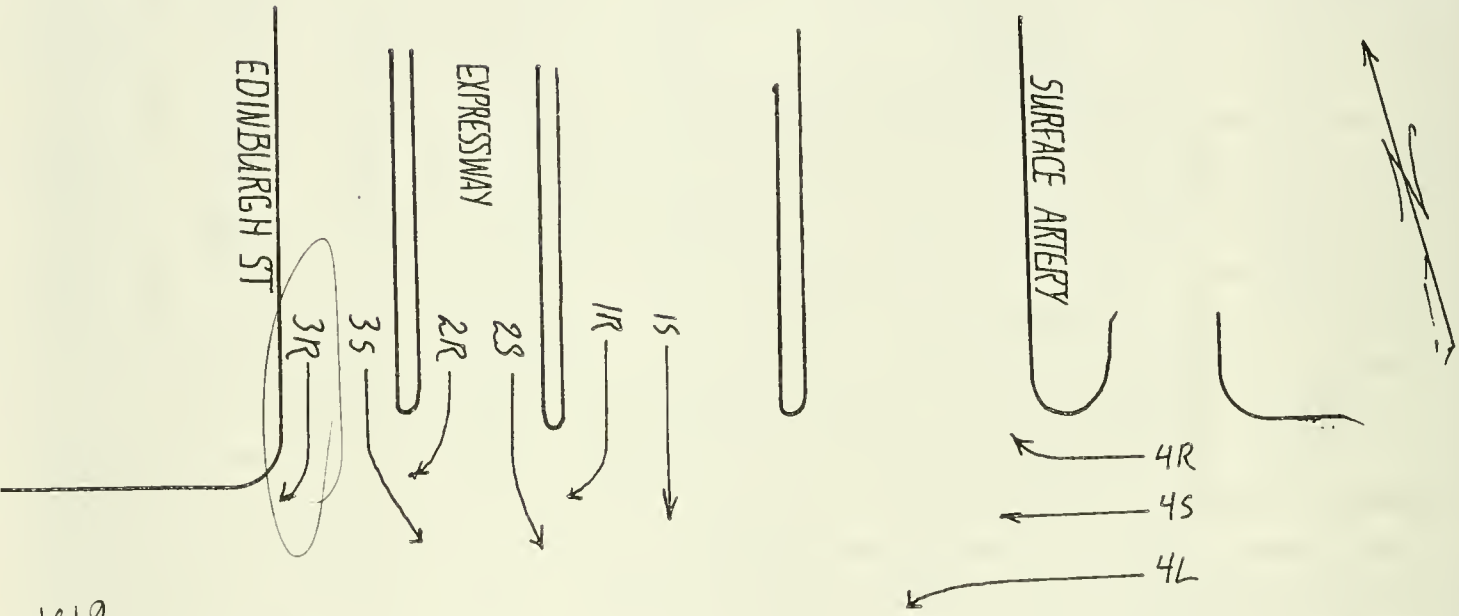
IME ARTS _ M	Pg 1 Sub Total		Surface Artery Northbound 4L	4S	4R									TOTAL HALF HOUR TALLY
0-7:30	791		29	141	30									991
0-8:00	978		21	217	7									1223
0-8:30	1422		16	274	5									1717
0-9:00	1136		43	228	13									1420
0-9:30	1013		28	211	14									1266
0-10:00	972		27	181	26									1206
0-10:30	1041		20	208	11									1280
0-11:00	1368		14	210	5									1597
-11:30	1020		18	193	6									1237
-12:00	1073		10	261	4									1348
-12:30	778		12	216	17									1023
-1:00	1114		15	259	16									1404
-1:30	893		13	226	10									1142
-2:00	939		12	234	8									1193
-2:30	989		11	229	7									1236
-3:00	934		12	244	4									1194
-3:30	1208		9	302	3									1522
-4:00	1202		22	274	5									1503
-4:30	1128		38	259	3									1428
-5:00	1355		26	265	6									1652
-5:30	1289		11	414	7									1721
6:00	1315		28	288	5									1636
6.30														
7:00														
7:30														
8.00														
8:30														
9:00														
9:30														
10.00														
10 30														
-11 00														
AL	23958		435	5334	212									GRAND TOTAL
AL 3 R														29939

INT. NO. #1292

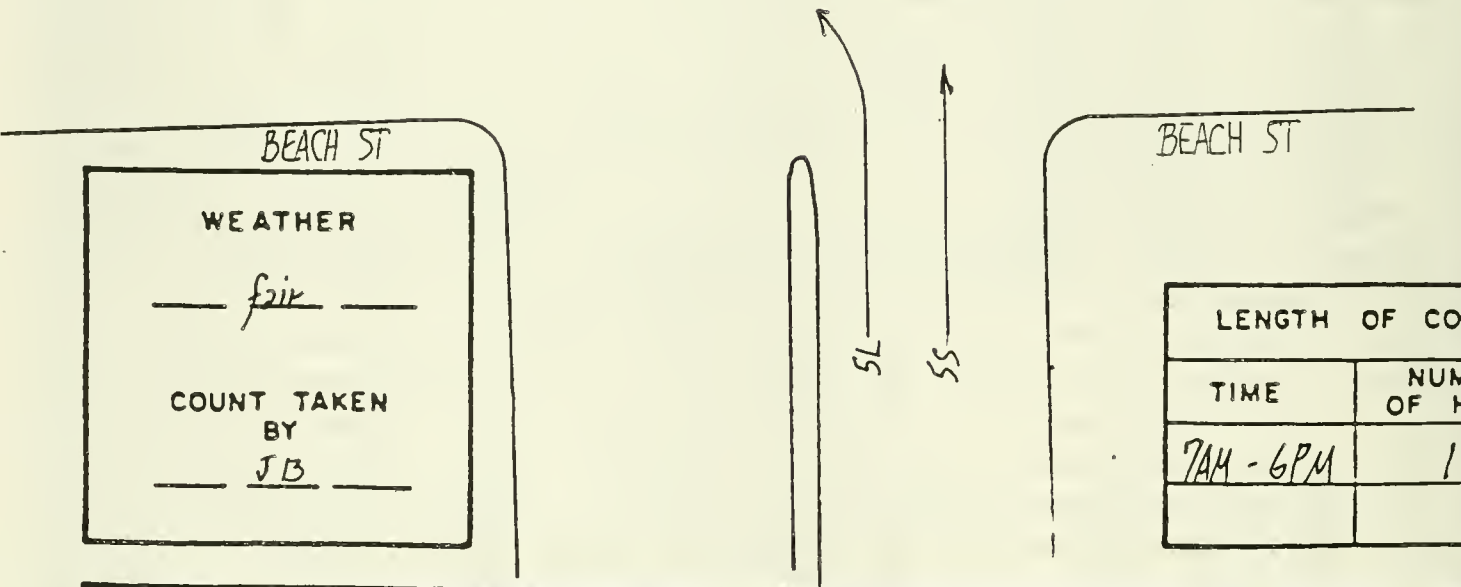
Beach St Edinburgh St &
Expressway Ramp Surface Artery City P
DATE 4/12 & 13 DAY OF WEEK Th / F

INTERSECTION TURNING MOVEMENT COUNT #88206

VEHICLES COUN
ALL
~~PASS. CARS~~
~~TRUCKS~~



1819



WEATHER
fair
COUNT TAKEN BY
JB

LENGTH OF COUN	
TIME	NUMB OF HO
7AM - 6PM	11

STREET	ENTERING VOLUME	FLOW PERCENT
1) Surface Artery S.B	12025	51.64
2) Exwy Ramp	2935	12.60
3) Edinburgh St	1956	08.40
4) Beach St	1832	07.87
5) Surface Artery N.B	4540	19.49
TOTALS	23288	100.00

COMMENTS

Leo Sullivan 421-1002

STA. NO. __

TRAFFIC MOVEMENT SUMMARY TABLE

ATION Beach St & Surface Arterial CITY OR TOWN City Proper

E 4/13 & 12/88 DAY OF WEEK Tues PM Wed AM WEATHER Sun 45° RECORDER JB

#88206

ME ARTS M	Surface Arterial SB		Exway Ramp		Edinburgh St		Beach St			Surface Arterial NB			TOTAL HALF HOURLY TALLY
	1S	1R	2S	2R	3S	3R	4L	4S	4R	5L	5S		
-7:30	224	11	47	44	19	21	21	10	2	0	106		505
-8:00	309	8	68	59	30	27	25	24	3	3	156		712
-8:30	371	22	95	93	21	19	72	40	2	0	175		910
-9:00	443	18	122	93	35	16	46	40	6	4	218		1041
-9:30	306	11	85	86	35	9	54	46	3	4	155		794
-10:00	362	19	127	25	33	21	49	28	1	3	147		815
-10:30	378	6	136	32	36	10	88	30	6	4	202		928
-11:00	414	18	112	40	52	6	48	24	0	4	188		906
-11:30	369	12	136	57	45	18	39	12	4	3	138		833
-12:00	415	24	111	42	66	27	49	18	1	2	194		949
-12:30	453	17	119	34	57	25	45	19	4	10	217		1000
-1:00	507	10	111	45	60	30	36	22	6	3	221		1051
1:30	527	19	75	27	71	31	42	21	5	4	156		978
2:00	437	18	86	14	51	34	42	23	6	2	144		859
2:30	428	12	74	20	72	32	36	24	4	6	190		908
3:00	578	16	92	18	46	30	48	14	8	8	312		1170
3:30	701	14	82	23	105	18	61	15	13	6	233		1271
4:00	808	26	121	9	104	30	44	24	38	2	278		1484
4:30	756	4	79	11	126	31	67	33	17	5	258		1387
5:00	776	11	85	20	93	41	64	23	14	8	266	—	1401
5:30	1154	23	96	17	168	30	93	21	10	1	297		1910
6:00	939	41	46	21	97	28	74	21	2	3	204		1476
6.30		64		25		55		42		4		200	
7:00													
7:30													
8.00													
8:30													
9.00													
9:30													
0.00													
10 30													
11 00													
AL	11655	370	2105	830	1422	534	1143	534	155	85	4455		GRAND TOTAL
L R													23288

INT. NO. #59

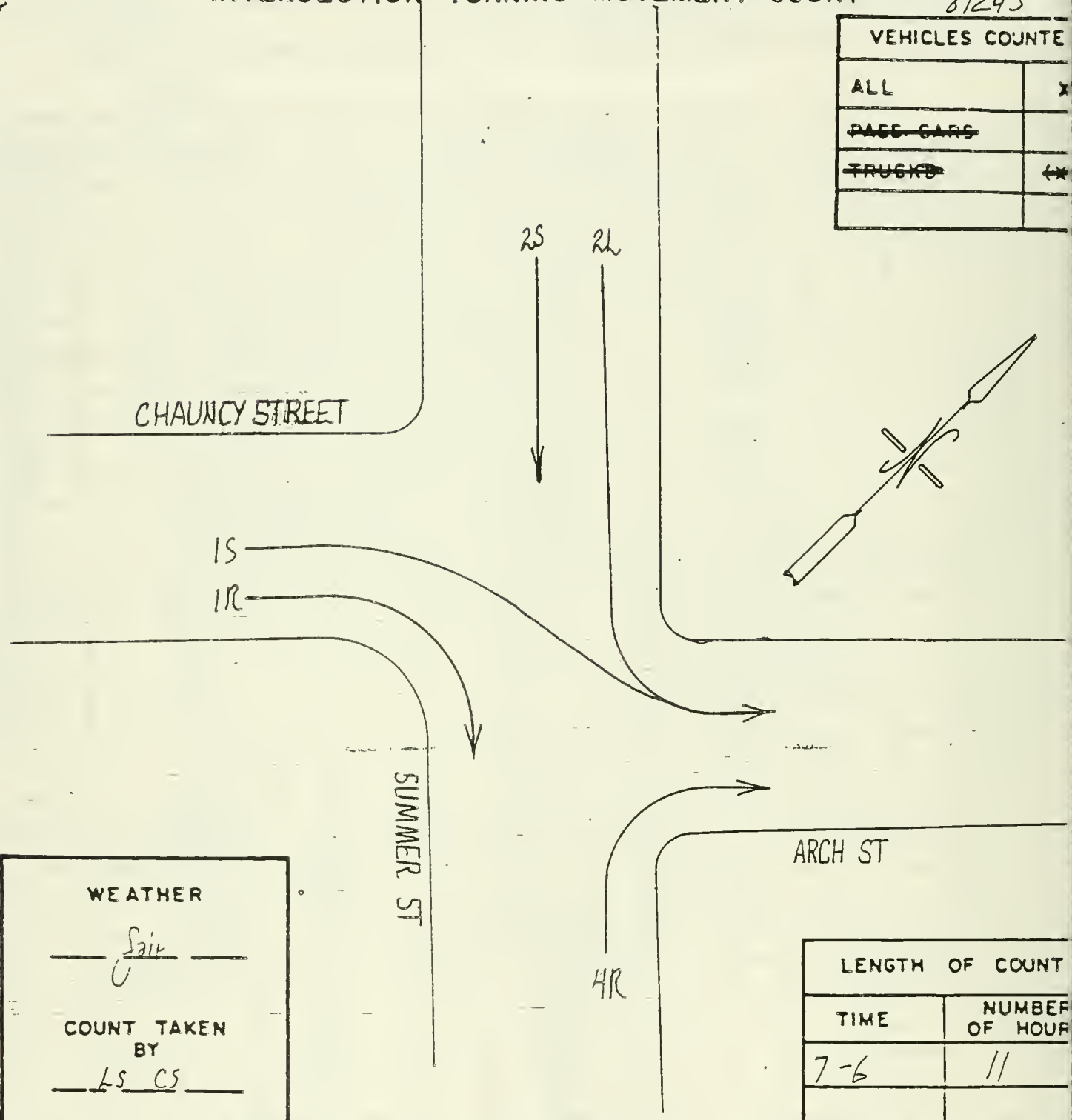
City Proper

DATE 9-8/88 DAY OF WEEK Thurs

INTERSECTION TURNING MOVEMENT COUNT

89243

VEHICLES COUNTE	
ALL	X
~~PASS. CARS~~	
~~TRUCKS~~	~~X~~



WEATHER
Fair
COUNT TAKEN BY
LS CS

LENGTH OF COUNT	
TIME	NUMBER OF HOUR
7-6	11

STREET	ENTERING VOLUME	FLOW PERCENT
1	3093	78.03
2	828	20.89
4	43	01.08
Totals	3964	100.00

COMMENTS

TRAFFIC MOVEMENT SUMMARY TABLE

ATION Summer St & Arch St CITY OR TOWN City Proper

E Sept. 8, '88 DAY OF WEEK Thurs WEATHER fair RECORDER LS/CS

89243

ME ARTS M	Chauncy St		Summer St Southbound						Summer St. Northbound		TOTAL HALF HOURLY TALLY
	1S	1R	2L	2S						4R	
1-7:30	38	10	4	4						0	56
-8:00	84	27	7	16					↓	5	139
-8:30	90	16	9	14						1	130
-9:00	143 [27]	34 [50]	8 [17]	17	[31]					3	205
-9:30	100	40	7	18					↑	5	170
-10:00	81	34	14	23						0	152
-10:30	95	66	11	31						2	205
-11:00	107	35	11	35						3	191
-11:30	98	29	7	22						1	157
-12:00	101	39	12	26						0	178
-12:30	93	34	12	34						0	173
-1:00	127	16	17	27						0	187
-1:30	99	18	16	16						1	149
-2:00	129	18	7	37						1	202
-2:30	99	13	11	31						2	156
-3:00	107	48	18	37						3	213
-3:30	102	50	22	28						2	204
-4:00	132	51	13	26						2	224
-4:30	130	45	15	21						1	212
-5:00	140	28	6	28					↓	3	205
-5:30	140	40	21	30						2	233
-6:00	137 [70]	30 [70]	23 [44]	36	[66]					6 [6]	232
-6:30									↑		
-7:00											
-7:30											
-8:00											
-8:30											
-9:00											
-9:30											
-10:00											
-10:30											
-11:00											
TAL	2372	721	271	557						43	GRAND TOTAL
AL F & R	3093		828						43		3964

INT. NO.

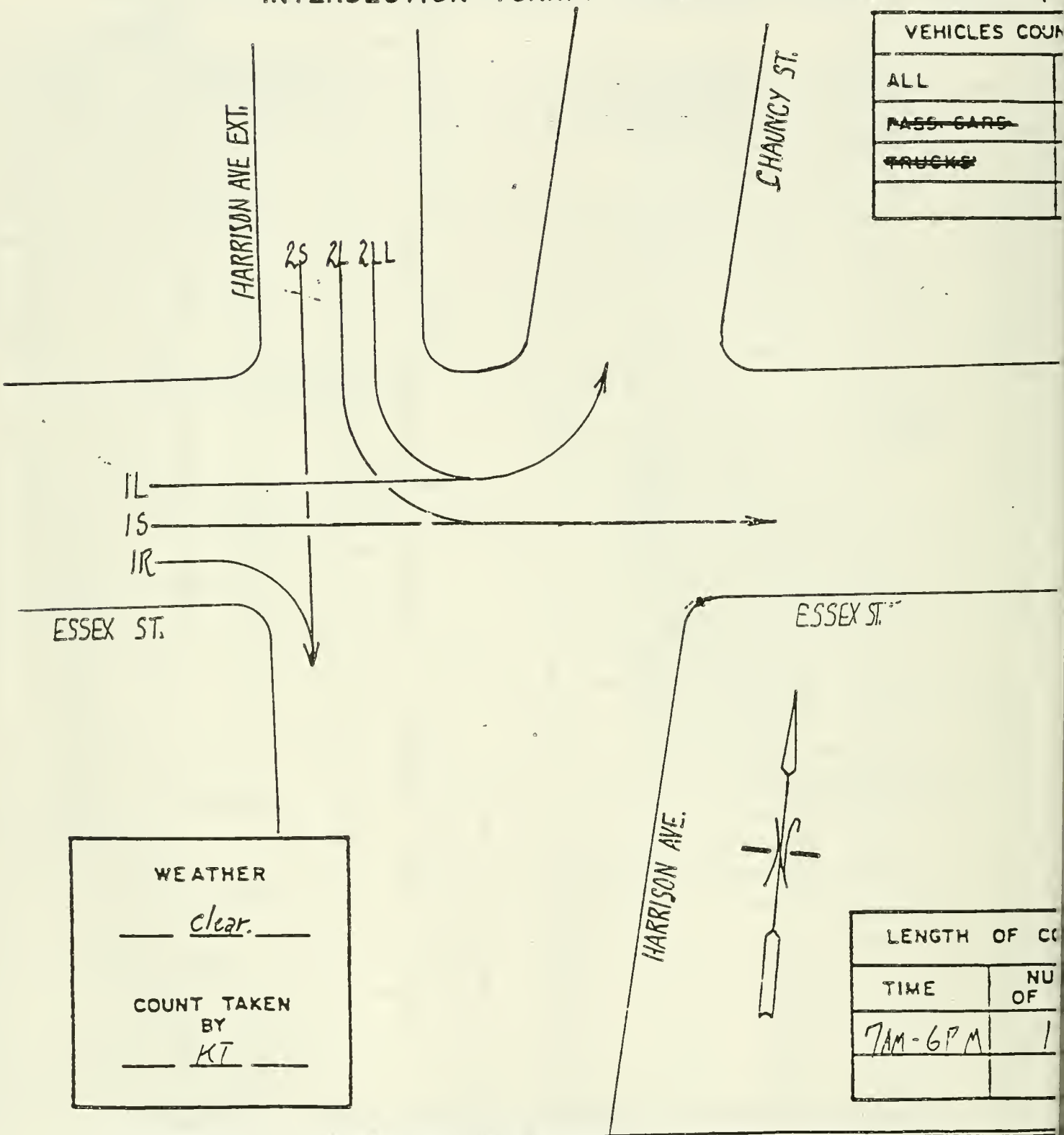
#61

INTERSECTION: Essex St, Harrison Ave & Harrison Ave Ext — City Prop
DATE 1-24&25, '89 DAY OF WEEK T-W

INTERSECTION TURNING MOVEMENT COUNT

89307

VEHICLES COUN
ALL
~~PASS. CARS~~
~~TRUCKS~~



WEATHER
clear.
COUNT TAKEN BY
KT

LENGTH OF CO	
TIME	NU OF
7AM-6PM	1

STREET	ENTERING VOLUME	FLOW PERCENT
1) ESSEX ST	9724	80.8
2) HARRISON AVE EXT	2309	19.2
TOTALS	12033	100.0

COMMENTS

TRAFFIC MOVEMENT SUMMARY TABLE

LOCATION Essex St. & Harrison Ave. CITY OR TOWN City Proper

DATE 1-24-89 1-25-89 DAY OF WEEK Tues AM Wed PM WEATHER Clear RECORDER KT

89307

TIME STARTS __ M	Essex St Eastbound 1R	1S	1L		Harrison Ave Ext. 2S	2L	2LL						TOTA HALF HO TALL
7:00-7:30	64	196	63		12	10	7						35
7:30-8:00	84	221	101		27	15	7					↓	45
8:00-8:30	143	245	93		29	13	1						52
8:30-9:00	70	265	129		20	17	4						50
9:00-9:30	70	234	118		30	19	14					↑	48
9:30-10:00	101	224	111		31	26	12						505
10:00-10:30	138	242	84		44	54	15						57
10:30-11:00	77	256	99		39	34	19						52
11:00-11:30	99	213	79		52	37	17						49
11:30-12:00	78	244	91		55	44	21						53
12:00-12:30	94	247	90		55	46	24						556
12:30-1:00	100	245	68		44	43	18						518
1:00-1:30	98	201	100		51	37	23						510
1:30-2:00	106	258	106		33	27	12						54
2:00-2:30	110	251	107		67	38	20						59
2:30-3:00	113	290	88		51	35	15						61
3:00-3:30	130	235	104		74	63	21						62
3:30-4:00	134	257	83		71	70	14						62
4:00-4:30	104	257	108		88	51	31					↓	63
4:30-5:00	105	271	119		65	41	13						61
5:00-5:30	107	259	137		105	52	22						68
5:30-6:00	89	214	107		89	43	10					↑	55
6:00-6:30													
6:30-7:00													
7:00-7:30													
7:30-8:00													
8:00-8:30													
8:30-9:00													
9:00-9:30													
9:30-10:00													
10:00-10:30													
10:30-11:00													
TOTAL	2214	5325	2185		1132	835	342						GRA TOT
TOTAL OF L S & R	9724				2309								1203

TJ010

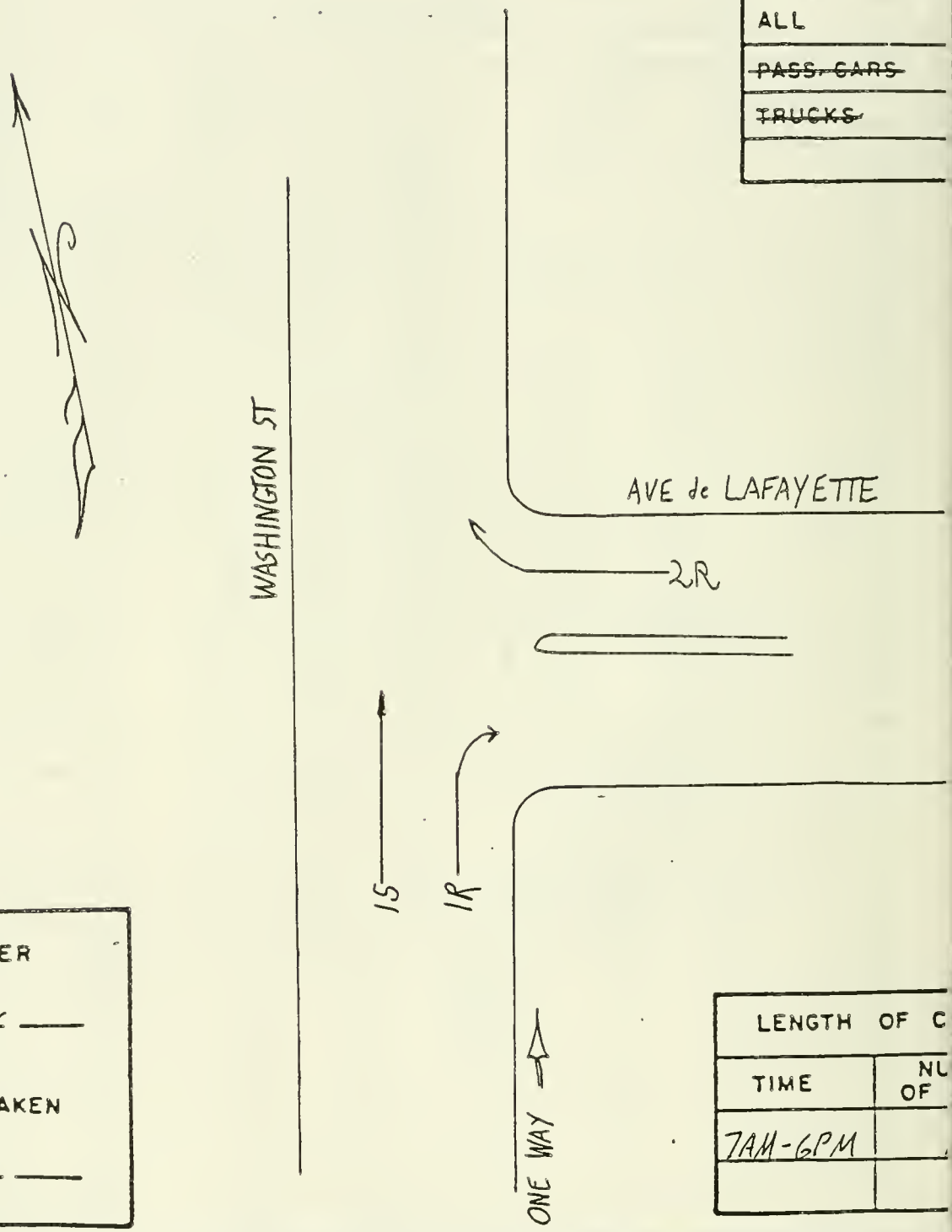
INT. NO.

INTERSECTION Ave de Lafayette & Washington City Bldg.

DATE 2/14/96 DAY OF WEEK Tu

INTERSECTION TURNING MOVEMENT COUNT #88174

VEHICLES CO
ALL
~~PASS. CARS~~
~~TRUCKS~~



WEATHER

fair

COUNT TAKEN BY

KT

LENGTH OF C	
TIME	NU OF
7AM-6PM	

STREET	ENTERING VOLUME	FLOW PERCENT
1) Washington St	5064	78.44
2) Ave de Lafayette	1392	21.56
TOTAL	6456	100.00

COMMENTS

Leo Sullivan 427-1652

STA. NO. __

TRAFFIC MOVEMENT SUMMARY TABLE

LOCATION Ave de Lafayette & Washington St CITY OR TOWN City Proper

DATE 12/16/88 DAY OF WEEK Tues WEATHER fair RECORDER LS/CS

#88174

TIME STARTS __ M	Washington St Northbound			Ave de Lafayette Westbound										TOTAL HALF HOUR TALLIES
		1S	1R			2R								
7:00-7:30		59	18			19								96
7:30-8:00		77	36			27								14[illegible]
8:00-8:30		111	69			19								19[illegible]
8:30-9:00	207	156	81	150		52	71							28[illegible]
9:00-9:30		177	77			61								31[illegible]
9:30-10:00		168	75			60								30[illegible]
10:00-10:30		187	60			54								30[illegible]
10:30-11:00		185	58			58								301
11:00-11:30		178	58			64								30[illegible]
11:30-12:00		160	75			67								30[illegible]
12:00-12:30		210	88			78								376
12:30-1:00		109	75			54								23[illegible]
1:00-1:30		183	85			87								355
1:30-2:00		190	69			75								334
2:00-2:30		202	79			61								34[illegible]
2:30-3:00		211	69			84								36[illegible]
3:00-3:30		179	52			86								317
3:30-4:00		141	51			52								24[illegible]
4:00-4:30		182	69			70								321
4:30-5:00		189	64			95								348
5:00-5:30	387	198	75	129		103	198							376
5:30-6:00		175	54			66								295
6:00-6:30														
6:30-7:00														
7:00-7:30														
7:30-8:00														
8:00-8:30														
8:30-9:00														
9:00-9:30														
9:30-10:00														
10:00-10:30														
10:30-11:00														
TOTAL		3627	1437			1392								GRAND TOTAL
TOTAL OF S & E														6456

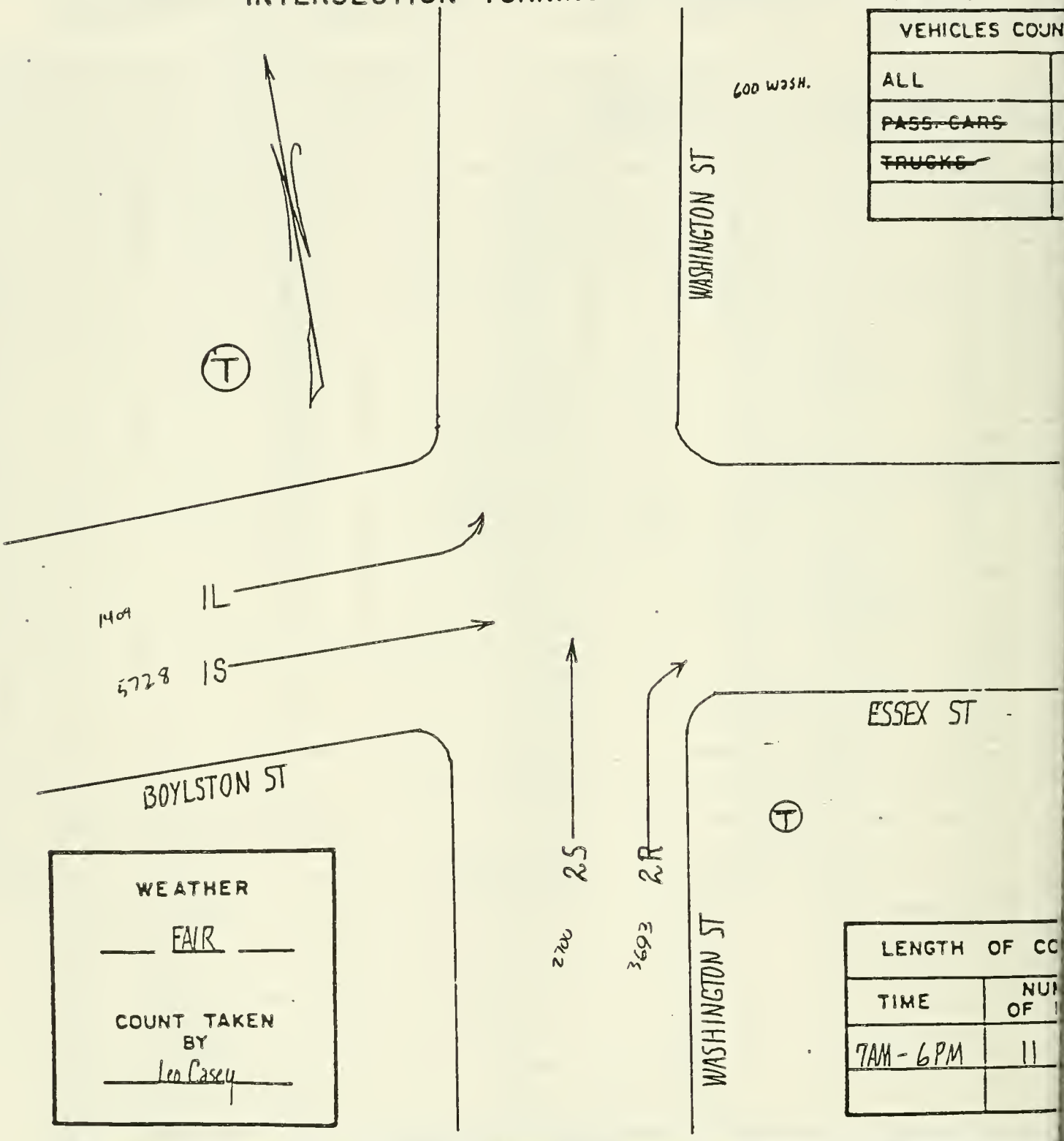
#17

INT. NO.

INTERSECTION: Washington Essex & Boylston (City Proper)

DATE 3/31/88-4/1/88 DAY OF WEEK Th/F

INTERSECTION TURNING MOVEMENT COUNT #88202



VEHICLES COUN
ALL
~~PASS. CARS~~
~~TRUCKS~~

LENGTH OF CO	
TIME	NUM OF
7AM - 6PM	11

WEATHER

FAIR

COUNT TAKEN BY

Leo Casey

STREET	ENTERING VOLUME	FLOW PERCENT
1) Boylston St E.B.	7137	52.75
2) Washington St NB	6393	47.25
Total	13530	100.00

COMMENTS

STA. NO.

TRAFFIC MOVEMENT SUMMARY TABLE

LOCATION Washington, Boylston & Essex Sts. CITY OR TOWN City Proper

DATE March 31/April 1/88 DAY OF WEEK Thurs/Fri WEATHER fair RECORDER Leo Cosey

88202

TIME STARTS — M	Boylston St Eastbound 1L	1S			Washington St. Northbound 2S	2R							TOTAL HALF HOUR TALLY
7:00-7:30	28	181			40	118							367
7:30-8:00	24	261			82	99							466
8:00-8:30	31	271			133	164							599
8:30-9:00	96	349	620	343	210	179	343						834
9:00-9:30	84	238			183	199							704
9:30-10:00	59	199			161	180							599
10:00-10:30	62	180			135	167							544
10:30-11:00	60	179			129	163							531
11:00-11:30	68	177			120	160							525
11:30-12:00	70	209			117	170							566
12:00-12:30	74	226			121	174							595
12:30-1:00	73	237			118	179							607
1:00-1:30	62	233			110	168							573
1:30-2:00	67	230			101	157							555
2:00-2:30	66	262			105	155							588
2:30-3:00	69	301			102	161							633
3:00-3:30	74	322			110	166							672
3:30-4:00	77	335			119	170							701
4:00-4:30	76	347			117	184							724
4:30-5:00	24	302			98	169							593
5:00-5:30	79	402			127	196							804
5:30-6:00	105 86	287	689	789	162	215	411						750
6:00-6:30													
6:30-7:00													
7:00-7:30													
7:30-8:00													
8:00-8:30													
8:30-9:00													
9:00-9:30													
9:30-10:00													
10:00-10:30													
10:30-11:00													
TOTAL	1409	5728			2700	3693							GRAND TOTAL
TOTAL OF S & R													13530

#27-1652

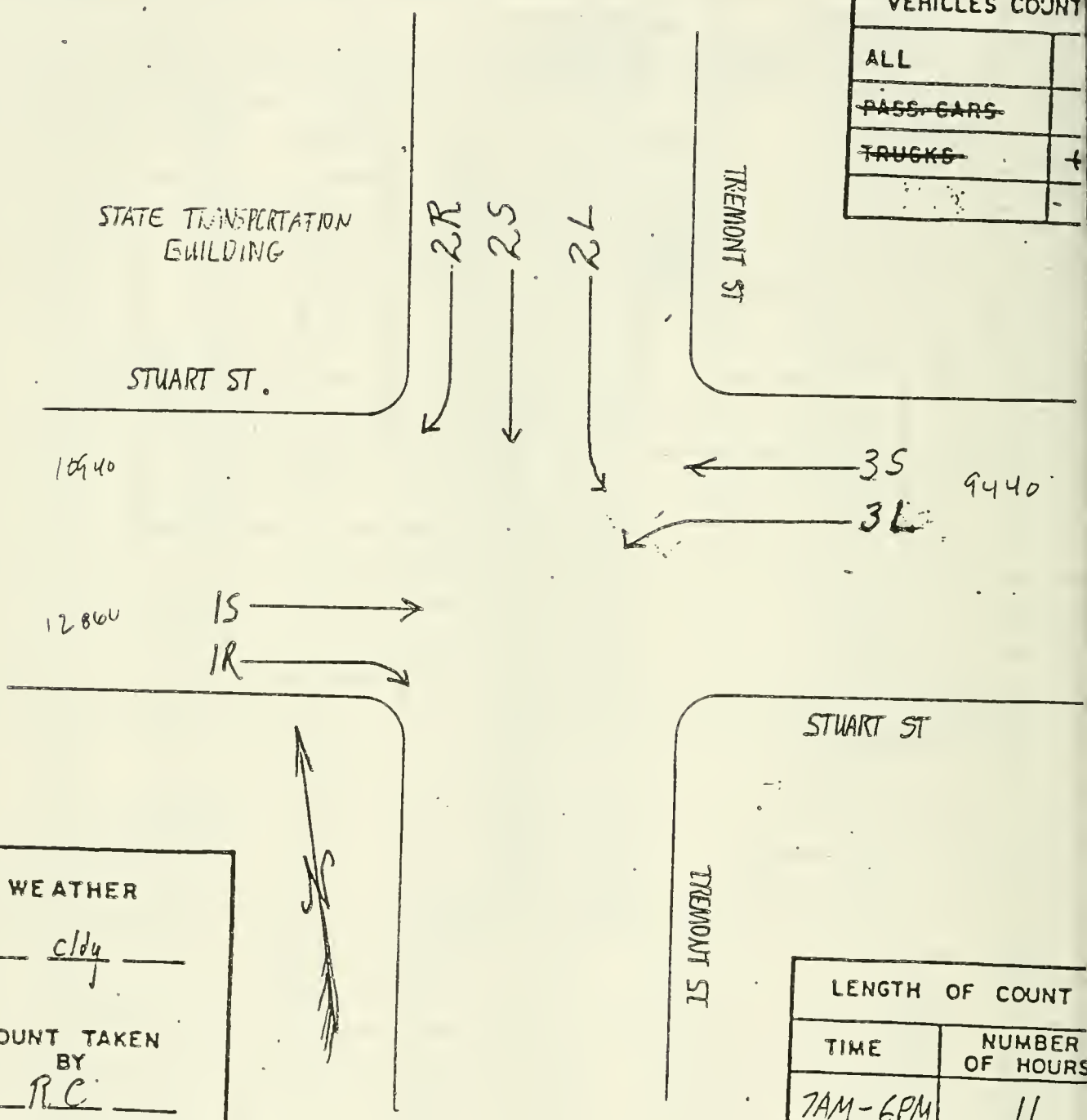
INT. NO.

INTERSECTION: Tremont & Stuart St.

DATE 6/25/87 DAY OF WEEK Thur

INTERSECTION TURNING MOVEMENT COUNT #87171

VEHICLES COUNT	
ALL	
~~PASS. CARS~~	
~~TRUCKS~~	+
	-



WEATHER: cldy

COUNT TAKEN BY: R.C.

LENGTH OF COUNT	
TIME	NUMBER OF HOURS
7AM-6PM	11

STREET	ENTERING VOLUME	FLOW PERCENT
1) STUART ST E.B.	8335	33.59
2) TREMONT ST S.B.	9817	39.56
3) STUART ST W.B.	6664	26.85
TOTAL	24816	100.00

COMMENTS

STA. NO. __

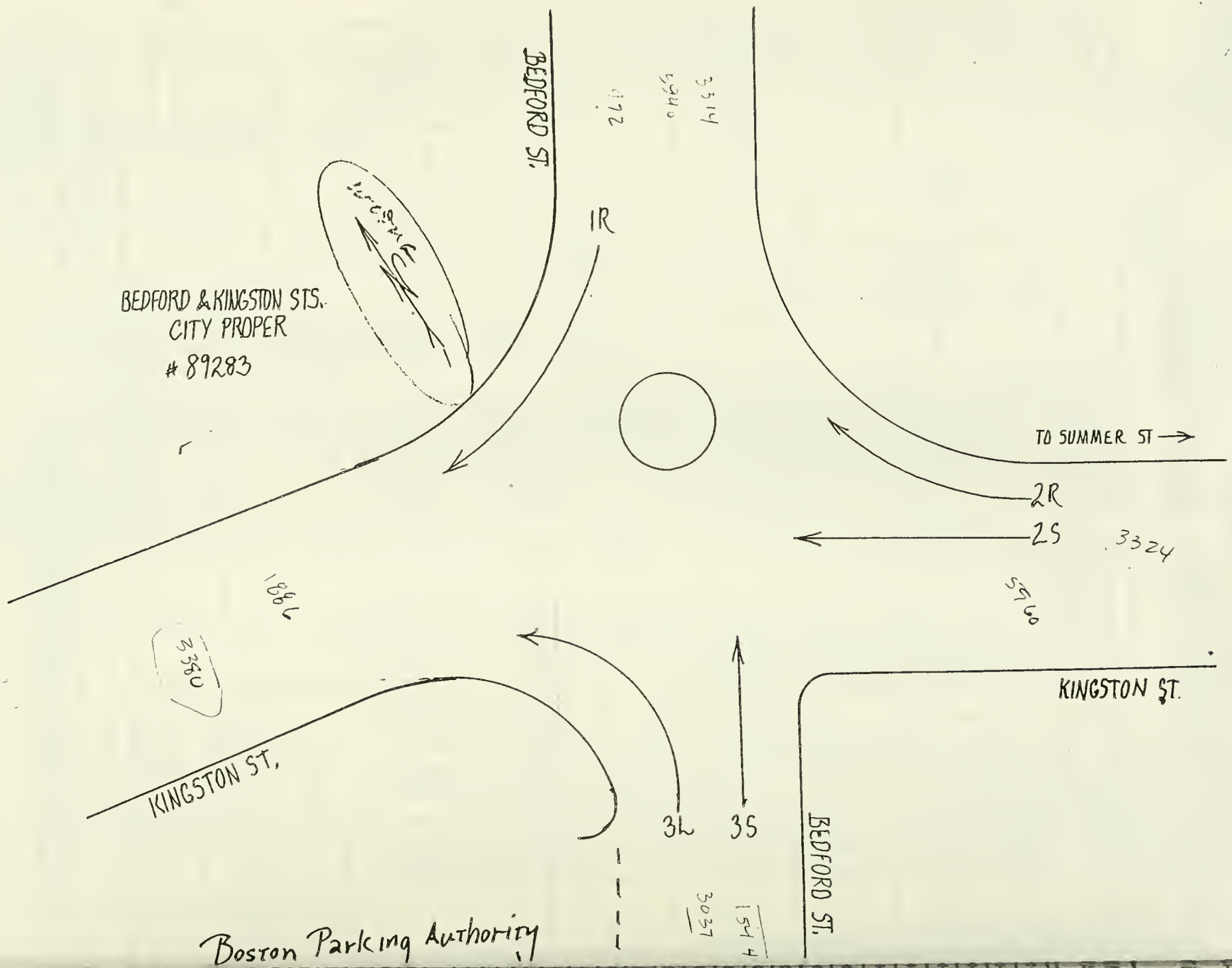
TRAFFIC MOVEMENT SUMMARY TABLE

TION Tremont St & Stuart St CITY OR TOWN City Proper

6/25/87 DAY OF WEEK Thurs WEATHER Cool/drizzle/fair RECORDER R.C.

#87171

E ITS M	Stuart St Eastbound 1S	1R	Tremont St Southbound 2L	2S	2R	Stuart St Westbound 3L	3S					TOTAL HALF HOURLY TALLY
30	170	73	48	152	68	46	168					725
00	202	80	80	174	62	56	264					918
30	230	96	99	215	85	78	301					1104
00	248	103	100	248	110	90	328					1227
30	303	102	80	202	119	76	235					1117
00	255	86	72	191	117	63	205					989
0	272	102	68	240	142	58	228					1110
0	226	97	71	218	135	45	207					999
0	252	100	94	210	130	65	228					1079
0	213	86	89	186	111	54	203					942
	249	117	65	190	127	87	254					1089
	211	116	71	201	75	48	147					869
	214	130	61	204	106	44	166					925
	287	133	61	227	135	54	212					1109
	265	140	73	250	110	65	218					1121
	280	108	59	223	102	76	195					1043
	289	144	68	270	122	78	255					1226
	296	160	101	302	94	68	250					1271
	287	170	117	320	109	73	261					1337
	300	158	114	404	134	56	268					1434
	328	180	66	512	121	72	318					1597
	332	145	72	465	170	74	327					1585
	5709	2626	1729	5604	2484	1426	5238					GRAND TOTAL 24816


BEDFORD ST.
1R
BEDFORD & KINGSTON STS.
CITY PROPER
89283
TO SUMMER ST →
2R
2S
3324
5960
3314
5940
1872
1886
3350
KINGSTON ST.
KINGSTON ST.
3L
3S
BEDFORD ST.
3037
1544
Boston Parking Authority

Leo Sullivan

STA. NO. --

TRAFFIC MOVEMENT SUMMARY TABLE

TION Bedford & Kingston Sts CITY OR TOWN City Proper

11/21 & 11/22/88 DAY OF WEEK Tues AM Mon PM WEATHER windy 40° RECORDER JB

#89283

E RTS M	Bedford St Southbound			Kingston St. Westbound			Bedford St Northbound							TOTAL HALF HOURLY TALLY
			1R		2S	2R	3L	3S						
:30			16		38	13	26	85						
:00			31		92	27	44	90						
:30			44		58	49	32	141						
:00			39		98	55	31	142						
:30			16		57	34	35	89						
:00			35		80	54	21	143						
:30			52		78	50	42	140						
:00			30		92	76	44	78						
:30			33		74	52	50	111						
:00			61		101	66	58	89						
:30			43		85	62	47	107						
:00			34		61	50	39	121	3					
:30			28		60	42	47	74	0					
:00			57		51	45	32	79						
:30			55		93	49	36	76						
:00			40		138	66	38	86						
:30			44		116	64	46	78						
:00			39		130	69	46	73						
:30			58		128	53	36	67						
:00		1	61		149	74	54	75						
:30		1	97		201	76	62	85						
:00			59		163	65	48	94						
:30														
:00														
:30			83		156	104	63	283						
:00														
:30			158		350	150	116	160						
:00														
:30			972											
:00														
:30														
:00														
L			972		2133	1191	914	423						GRAND TOTAL

#30'11

INT. NO.

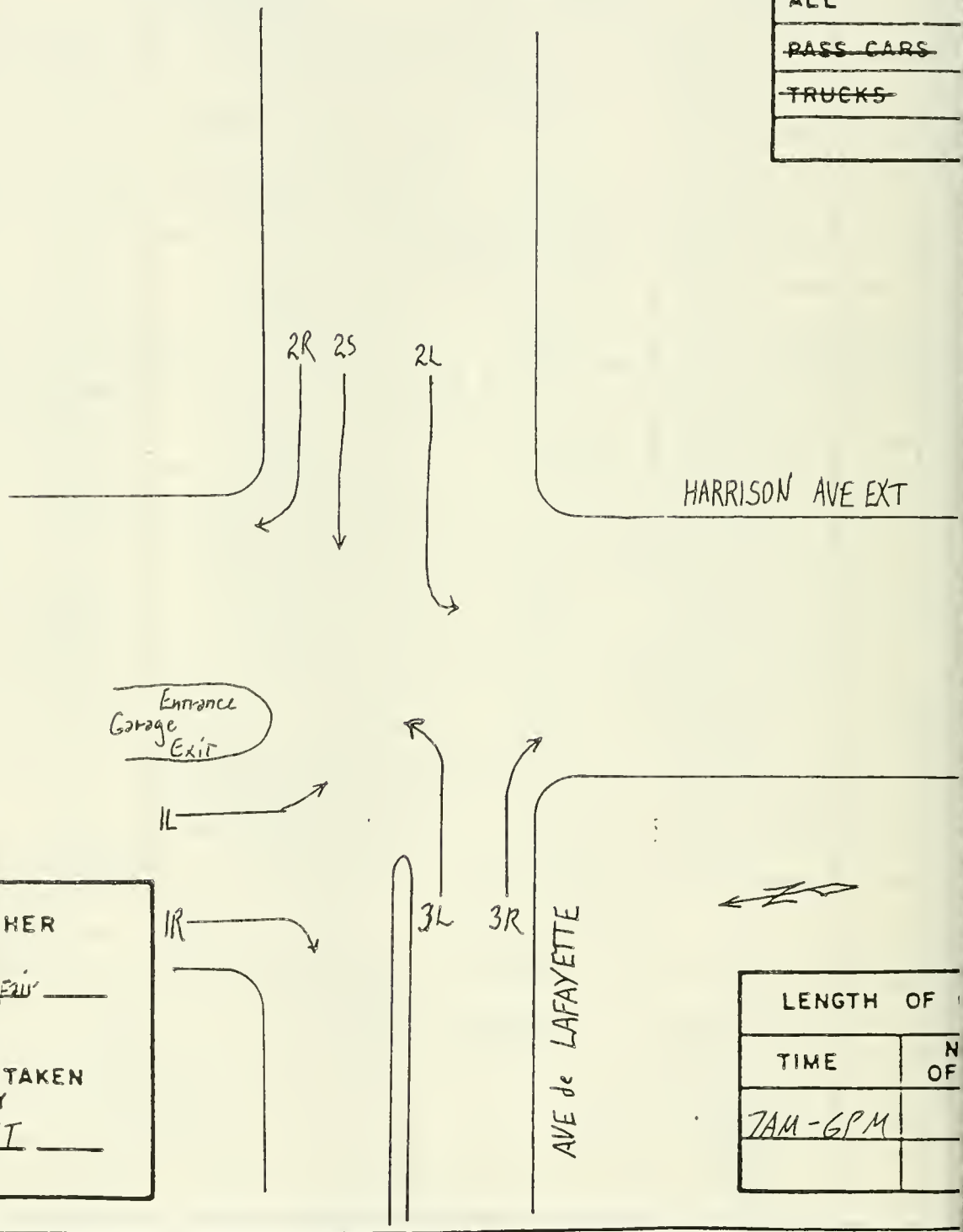
INTERSECTION Ave de Lafayette & Harrison (City Pro

DATE 2/17/88 DAY OF WEEK

INTERSECTION TURNING MOVEMENT COUNT

#88175

VEHICLES CO
ALL
~~PASS CARS~~
~~TRUCKS~~



WEATHER
Fair
COUNT TAKEN BY
KT

LENGTH OF	
TIME	N OF
7AM-6PM	

STREET	ENTERING VOLUME	FLOW PERCENT
1) Lafayette Place Garage	396	09.82
2) Ave de Lafayette	2324	57.64
3) Ave de Lafayette	1312	32.54
TOTAL	4032	100.00

COMMENTS

Leo Sullivan 427-1652

STA. NO. __

TRAFFIC MOVEMENT SUMMARY TABLE

ATION Avenue de Lafayette to Harrison Ave Ext CITY OR TOWN City Proper

E 12-17-18 DAY OF WEEK Wed WEATHER fair RECORDER KT

#88175

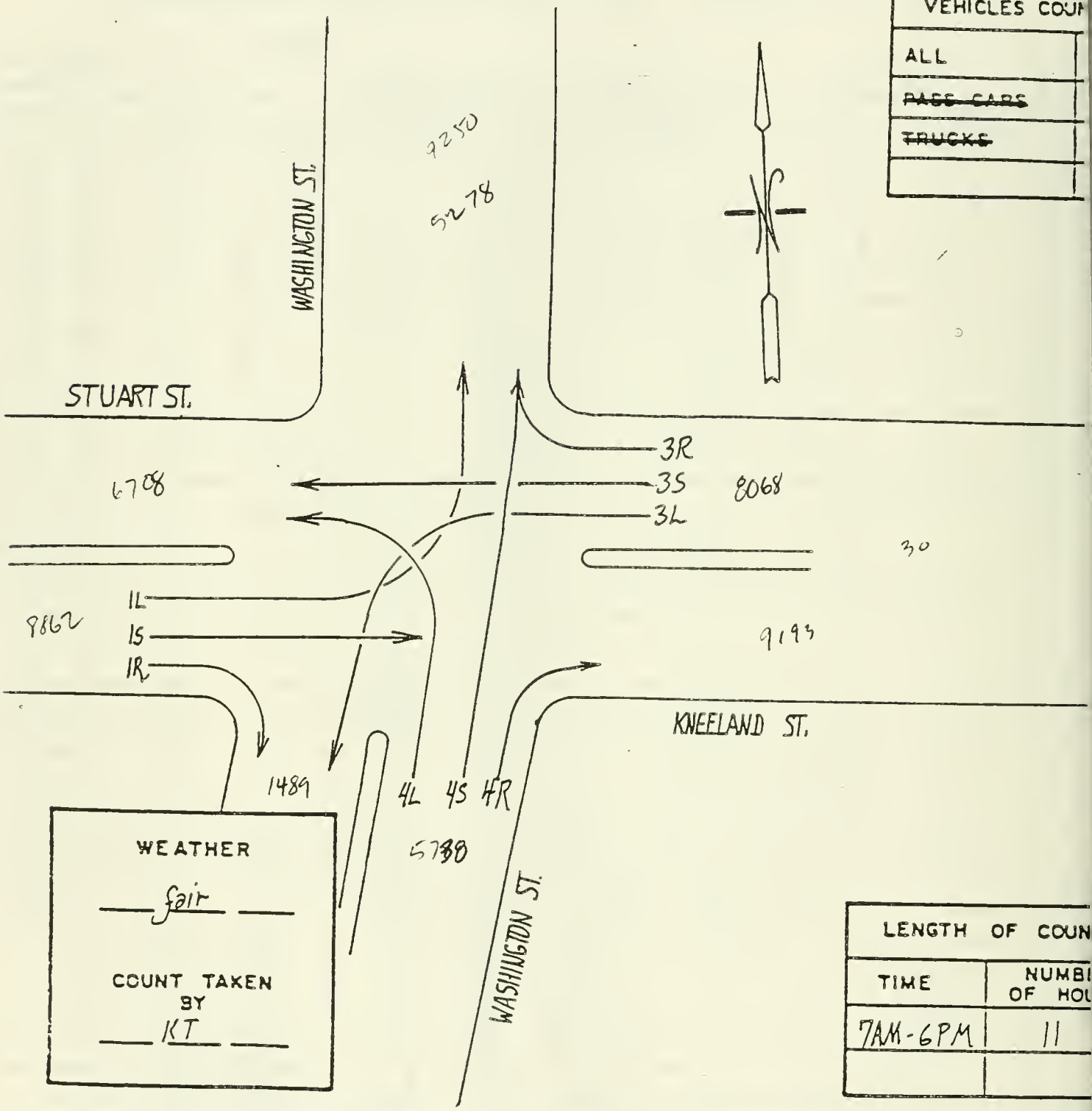
ME ARTS M	Garage Entrance			Ave de Lafayette Westbound			Ave de Lafayette Eastbound						TOTAL HALF HOUR TALLY
	1R		1L	2L	2S	2R	3L	3S	3R				
-7:30	0		1	20	16	12	18		6				73
-8:00	0		2	24	30	24	28		6				114
-8:30	1		2	36	30	26	37		24				156
-9:00	12		4 v	37 TR	43 TR	SU 24	66	103	14	38			189
-9:30	3		5	43	48	30	33		29				191
-10:00	3		8	43	39	12	42		33				180
-10:30	0		7	28	45	14	32		21				147
-11:00	6		6	52	55	10	24		30				183
-11:30	2		8	41	46	9	18		41				165
-12:00	2		9	44	51	6	27		39				178
-12:30	5		11	49	54	5	36		48				208
-1:00	3		12	53	58	13	25		45				209
-1:30	5		16	44	77	11	26		42				221
-2:00	6		13	23	46	5	26		31				150
-2:30	4		8	44	45	3	24		37				165
-3:00	1		18	42	75	3	14		52				205
-3:30	11		14	54	71	8	9		38				205
-4:00	7		22	36	48	2	12		41				168
-4:30	11		19	38	55	6	15		52				196
-5:00	5		28	49	87	8	17		39				233
-5:30	9		37	48	76	4	26		40				240
-6:00	13 v		48 65	69 111	71 147	10 6	17	43	32	72			256
-6:30													
-7:00													
-7:30													
-8:00													
-8:30													
-9:00													
-9:30													
-10:00													
-10:30													
-11:00													
TAL	98		298	917	1166	241	572		740				GRAND TOTAL
TAL OF													4032

INT. NO. #15

INTERSECTION: Washington St, Stuart St. / Kneeland St. City Proper
DATE Jan. 23 & 20/89 DAY OF WEEK Mon.

INTERSECTION TURNING MOVEMENT COUNT 89306

VEHICLES COUN
ALL
~~PASS. CARS~~
~~TRUCKS~~



WEATHER
fair

COUNT TAKEN BY
KT

LENGTH OF COUN	
TIME	NUMBE OF HOU
7AM-6PM	11

STREET	ENTERING VOLUME	FLOW PERCENT
1) STUART ST. E.B.	8862	39.1
2)		
3) KNEELAND ST. W.B.	8068	35.6
4) WASHINGTON ST. N.B.	5738	25.3
TOTALS	22668	100.0

COMMENTS

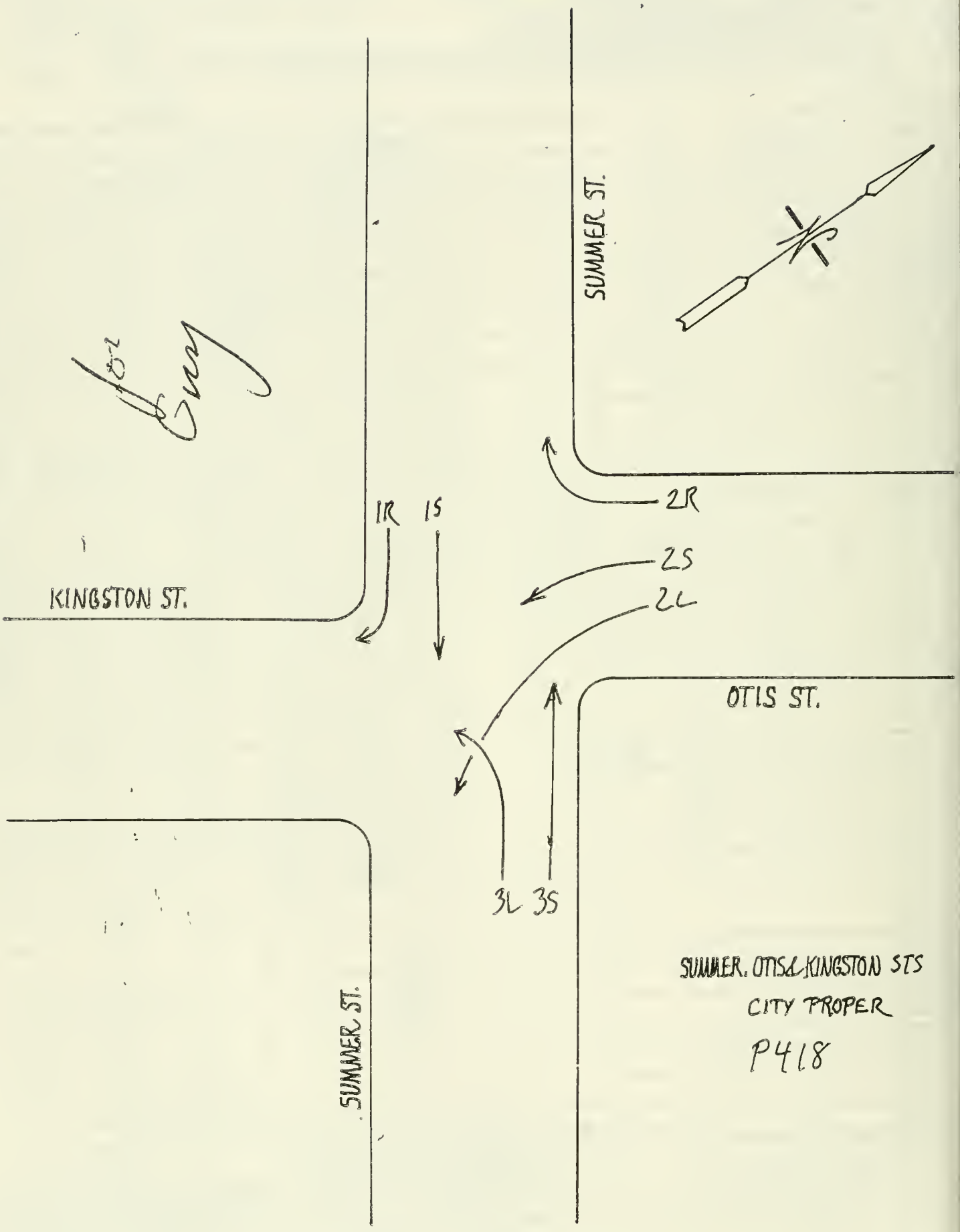
TRAFFIC MOVEMENT SUMMARY TABL

LOCATION Washington, Kneeland & Stuart CITY OR TOWN City Proper

DATE Jan 20 89 AM Jan 23 89 PM DAY OF WEEK Fri AM Mon PM WEATHER fair RECORDER KT

89306

TIME STARTS	Stuart St Eastbound						Kneeland St Westbound			Washington St Northbound			TOTA HALF HO TALL
M	1L	1S	1R				3L	3S	3R	4L	4S	4R	
7:00-7:30	40	188	16				35	217	45	34	100	71	746
7:30-8:00	44	267	19	↓			50	292	26	48	128	105	979
8:00-8:30	54	317	13				58	294	90	59	150	96	1131
8:30-9:00	68	337	22				61	275	54	44	169	109	1139
9:00-9:30	70	317	22	↑			72	281	66	34	168	115	1145
9:30-10:00	62	251	26				36	237	67	30	121	104	944
10:00-10:30	55	357	11				37	250	63	31	130	112	1046
10:30-11:00	63	290	14				41	244	72	40	104	96	964
11:00-11:30	78	300	25				40	267	53	40	97	99	999
11:30-12:00	67	379	16				33	325	87	40	117	96	1160
12:00-12:30	69	351	22				30	274	73	38	95	81	1033
12:30-1:00	58	343	22				46	237	76	44	83	94	1003
1:00-1:30	75	272	35				51	278	75	48	86	118	1038
1:30-2:00	55	285	24				52	289	66	55	94	116	1036
2:00-2:30	72	298	23				47	243	65	32	87	88	955
2:30-3:00	77	273	28				55	262	49	34	114	98	990
3:00-3:30	80	381	23				50	263	38	38	147	117	1137
3:30-4:00	60	354	21	↓			30	246	41	43	113	85	993
4:00-4:30	73	354	27				46	258	25	30	113	130	1054
4:30-5:00	84	346	37				44	253	64	42	145	118	1133
5:00-5:30	56	361	27	↑			33	258	28	41	177	114	1035
5:30-6:00	60	317	31				38	269	48	47	111	93	1008
6:00-6:30													
6:30-7:00													
7:00-7:30													
7:30-8:00													
8:00-8:30													
8:30-9:00													
9:00-9:30													
9:30-10:00													
10:00-10:30													
10:30-11:00													
TAL	1420	6938	504				985	5812	1271	896	2587	2255	GRAN TOTA
TAL F e	8862						8068			5738			22668



SUMMER, OTIS & KINGSTON STS
CITY PROPER
P418

Leo Sullivan 427-1652 STA. NO. --

TRAFFIC MOVEMENT SUMMARY TABLE

LOCATION Summer, Otis & Kingston Sts. CITY OR TOWN City Proper

DATE _____ DAY OF WEEK _____ WEATHER _____ RECORDER _____

P418

TIME STARTS -- M	Summer St Toward S. Sta. 1S	1R	Otis St 2L	2S	2R	Summer St Toward Wash 3L	3S					TOTAL HALF HOUR TALLY
700-715	6	3	4	20	0	14	0	47				
715-730	7	15	8	29	0	14	1	74				
730-745	11	3	13	27	0	17	3	74				
745-800	8	12	20	38	0	24	1	103				
800-815	13	6	11	49	0	27	1	107				
815-830	10	12	12	47	0	34	0	115				
830-845	8	15	16	38	0	29	4	110				
845-900	8	15	13	42	0	30	0	108				
~~1100-1115~~	39	48	52	176	0	120	5					
~~1115-1130~~			139					440				
~~1130-1145~~												
~~1145-1200~~												
~~1200-1215~~												
~~1215-1230~~												
~~1230-1245~~												
~~1245-100~~												
~~300-315~~												
~~315-330~~												
~~330-345~~												
~~345-400~~												
400-415	18	9	16	64	0	19	0	126				
415-430	9	9	16	68	0	12	1	115				
430-445	13	26	25	86	0	19	0	169				
445-500	20	11	21	58	0	14	1	125				
500-515	11	20	21	76	0	14	1	145				
515-530	19	24	16	72	0	18	0	149				
530-545	22	19	24	73	0	29	3	170				
545-600	19	20	21	72		16	4	152				
	71	83	82	293		77	8	614				
TOTAL												GRAN TOTA
TOTAL												

#3085

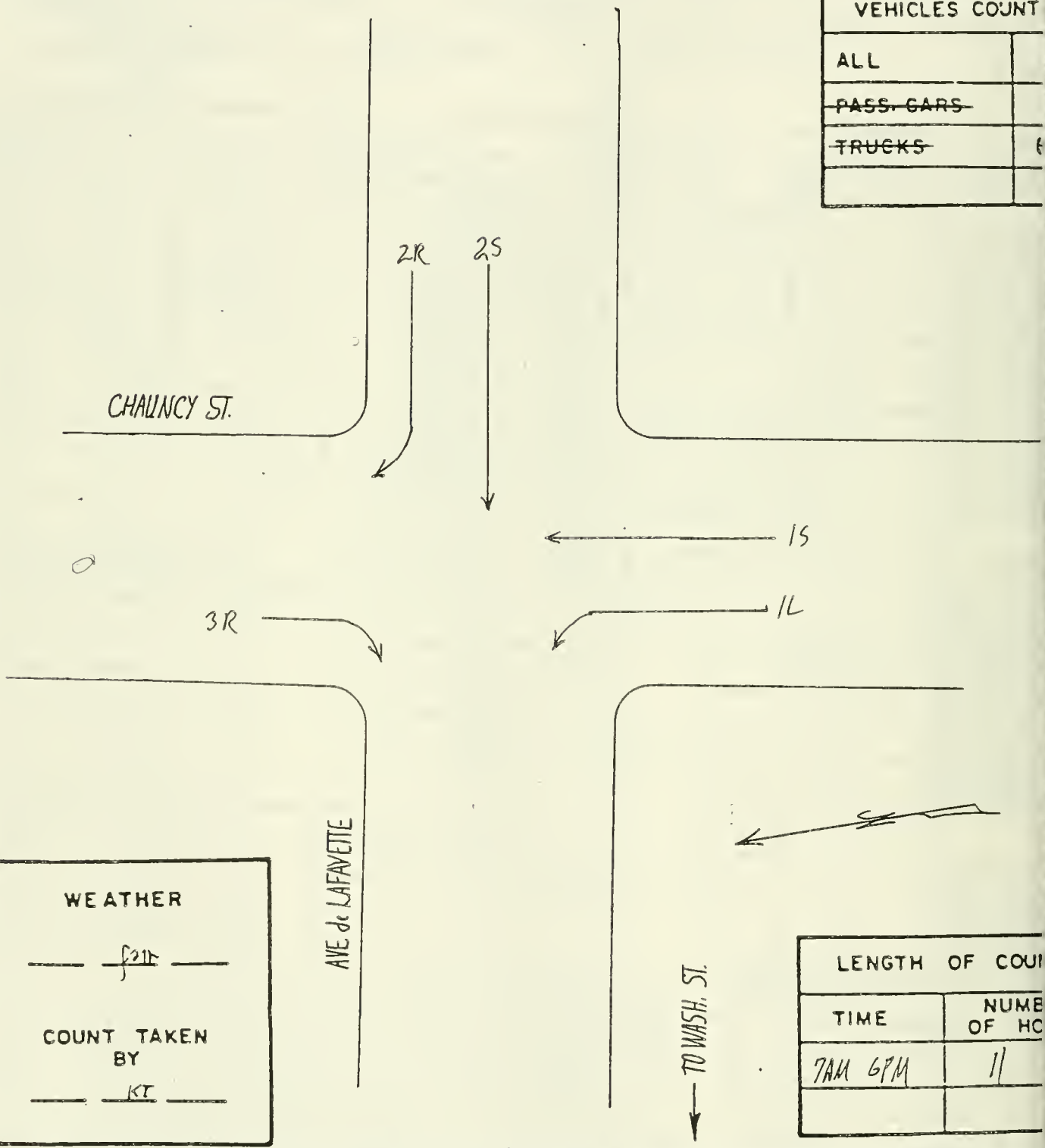
INT. NO.

INTERSECTION Chauncy St & Ave. de Lafayette City Property

DATE 2/18 & 19/88 DAY OF WEEK Wed/Fri

INTERSECTION TURNING MOVEMENT COUNT 88178 88178

VEHICLES COUNT	
ALL	
~~PASS. CARS~~	
~~TRUCKS~~	



WEATHER

fair

COUNT TAKEN BY

KT

LENGTH OF COUI	
TIME	NUME OF HC
7AM 6PM	11

STREET	ENTERING VOLUME	FLOW PERCENT
1) Chauncy St	2026	49.40
2) Ave de Lafayette	293	07.14
3) Chauncy St	1782	43.46
	4101	100.00

COMMENTS

Leo Sullivan 427-1652 STA. NO. __

TRAFFIC MOVEMENT SUMMARY TABLE

CATION Ave de Lafayette & Chauncy ST. CITY OR TOWN City Proper

TE 2/17 & 19/88 DAY OF WEEK Fri AM / Wed PM WEATHER fair RECORDER KT

#88178

IME ARTS M	Chauncy St Northbound 1L	1S		Ave de Lafayette westbound 2S	2R		Chauncy St Southbound 3R						TOTAL HALF HOUR TALLY
0-7:30	5	54		1	0		34						94
0-8:00	10	89		0	0		63						162
0-8:30	11	111		1	1		65						195
0-9:00	9	92		1	3		90						195
0-9:30	16	66		0	3		90						175
0-10:00	18	69		1	4		100						192
0-10:30	15	69		3	0		74						161
0-11:00	21	85		1	4		73						184
0-11:30	11	102		5	6		77						201
0-12:00	10	81		13	7		90						201
0-12:30	13	90		12	6		93						214
0-1:00	18	50		13	10		70						161
-1:30	17	89		12	10		91						219
-2:00	14	66		8	6		74						168
-2:30	14	86		10	8		79						197
-3:00	15	69		13	8		86						191
-3:30	24	64		10	8		94						200
-4:00	8	67		11	3		61						150
-4:30	11	86		12	5		59						173
-5:00	8	70		20	8		96						202
-5:30	8	83		10	9		111						221
-6:00	5	101		16	11		112						245
-6:30													
-7:00													
-7:30													
-8:00													
-8:30													
-9:00													
-9:30													
-10:00													
-10:30													
-11:00													
TAL	281	1745		173	120		1782						GRAND TOTAL
AL F 8 H													4101

Traffic Control Systems
Planning, Engineering, Construction & Maintenance
Brighton, Ma. Tel. (617) 782-9757

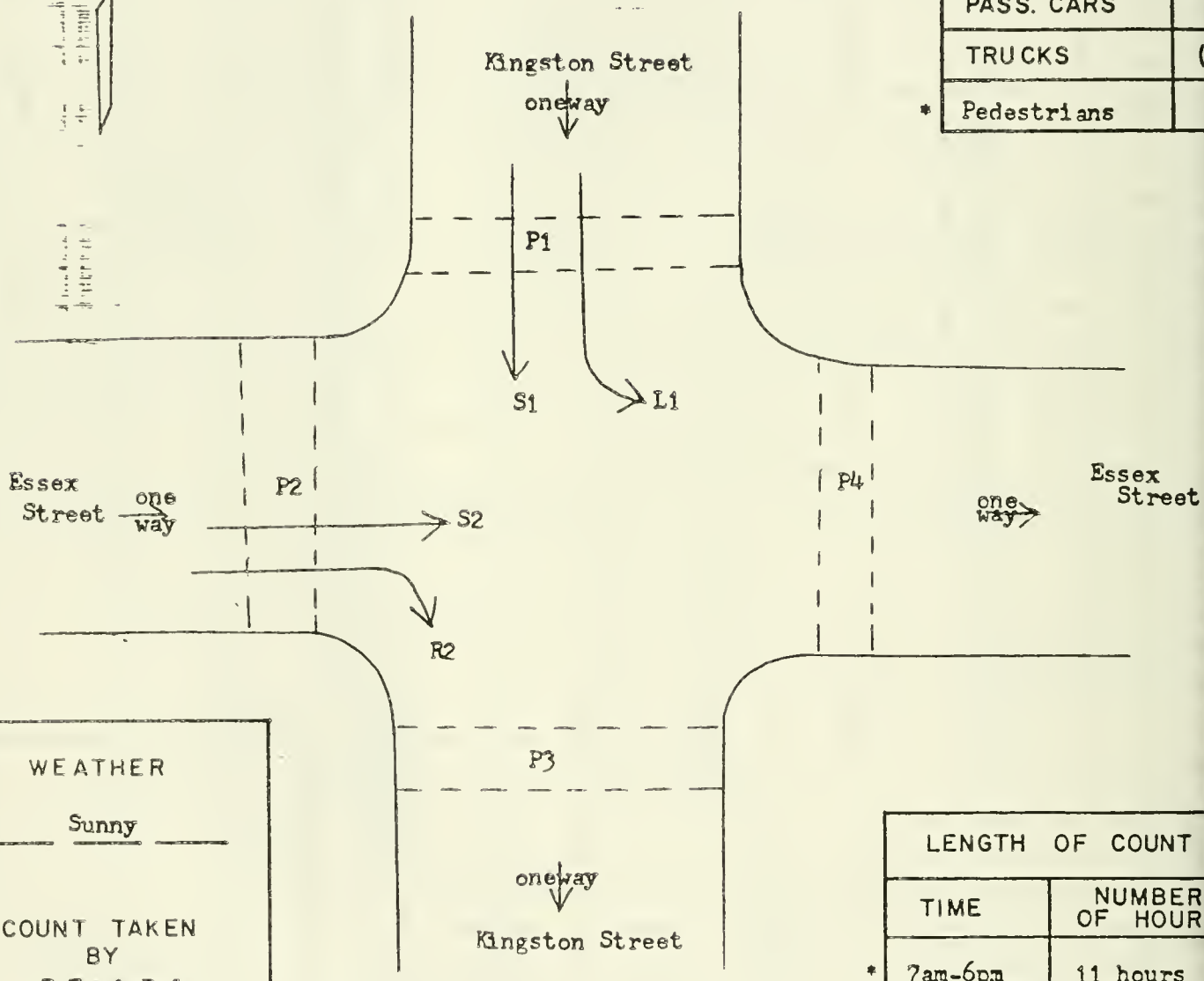
#37

INT. NO. 165

CITY Boston Proper
INTERSECTION Essex Street & Kingston Street
DATE 7/23/86 DAY OF WEEK Wedn

INTERSECTION TURNING MOVEMENT COUNT

VEHICLES COUN	
* ALL	
PASS. CARS	
TRUCKS	(
* Pedestrians	



WEATHER
Sunny

COUNT TAKEN BY
D.T. & B.J.

LENGTH OF COUNT	
TIME	NUMBER OF HOUR
* 7am-6pm	11 hours

STREET		ENTERING VOLUME	FLOW PERCENT
Kingston Street	SB	3069	35.6
Essex Street	EB	5558	64.4
TOTAL		8627	100%

COMMENTS

Pedestrians Count:
P1 = 1277
P2 = 659
P3 = 792
P4 = 332
Total = 3060

Traffic Control Systems
Planning, Engineering, Construction, & Maintenance
Brighton, Ma. Tel. (617) 782-9757

#165

TRAFFIC MOVEMENT SUMMARY TABLE

LOCATION Essex Street & Kingston Street CITY OR TOWN Boston Proper

DATE 7/23/86 DAY OF WEEK Wednesday WEATHER Sunny RECORDER D.T. & B.J.

TIME STARTS A.M.	Kingston Street Southbound				Essex Street Eastbound									TOTAL HALF HOUR TALLY
	L1	S1			S2	R2								
7:00-7:30	30	23			162	5								220
7:30-8:00	50	54			237	12								353
8:00-8:30	50	33			220	10								313
8:30-9:00	120 76	41	74	443	223	14	24							354
9:00-9:30	72	31			225	25								353
9:30-10:00	70	27			183	18								298
10:00-10:30	76	39			245	29								389
10:30-11:00	87	39			236	19								381
11:00-11:30	85	55			185	20								345
11:30-12:00	88	48			201	25								362
12:00-12:30	98	52			220	28								398
12:30-1:00	69	46			213	32								360
1:00-1:30	102	50			230	14								396
1:30-2:00	66	60			280	19								425
2:00-2:30	94	44			256	28								422
2:30-3:00	60	42			175	20								297
3:00-3:30	140	75			260	33								508
3:30-4:00	105	66			250	35								456
4:00-4:30	120	69			257	37								483
4:30-5:00	127	72			246	48								493
5:00-5:30	131	89			253	50								523
5:30-6:00	136	82			238	42								498
6:00-6:30														
6:30-7:00														
7:00-7:30														
7:30-8:00														
8:00-8:30														
8:30-9:00														
9:00-9:30														
9:30-10:00														
10:00-10:30														
10:30-11:00														
TOTAL	1932	1137			4995	563								GRAND TOTAL
TOTAL OF BOTH	3069				5558									8627

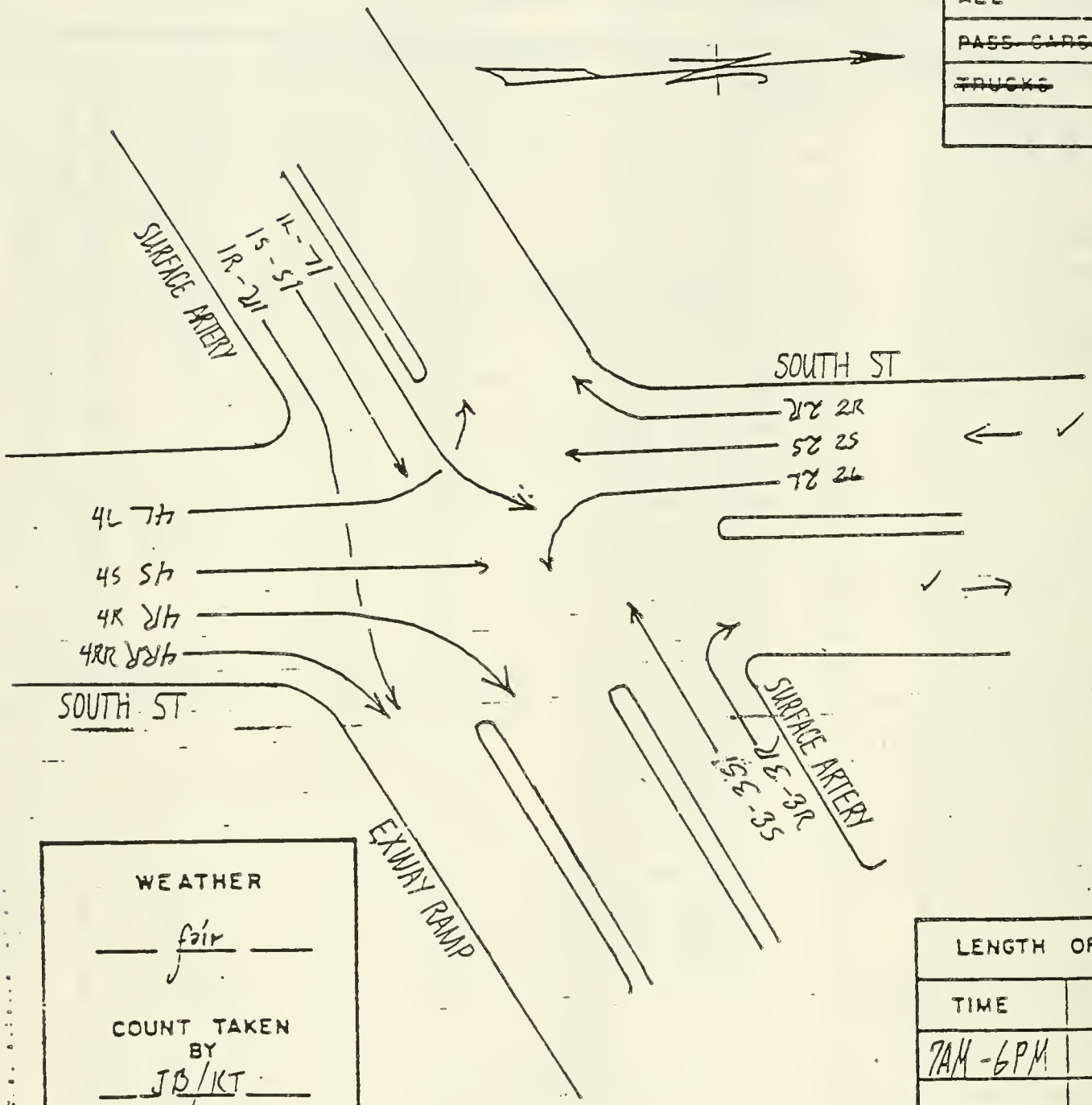
INT. NO. 7 1670

DATE 4/15 + 5/12/88 DAY OF WEEK Thurs

INTERSECTION TURNING MOVEMENT COUNT

#88207

VEHICLES COUNTED	
ALL	X
~~PASS. CARS~~	
~~TRUCKS~~	~~(X)~~



WEATHER
fair

COUNT TAKEN BY JB/KT

LENGTH OF COUNT	
TIME	NUMBER OF HOURS
7AM - 6PM	11

STREET		ENTERING VOLUME	FLOW PERCENT
1) SURFACE ARTERY	E.B. (N.B.)	14484	45.9
2) SOUTH ST	S.B.	1365	4.3
3) SURFACE ARTERY	W.B. (S.B.)	6859	21.8
4) SOUTH ST	N.B.	8828	28.0
TOTALS		31536	100.0

COMMENTS

during the 11hrs 5 Trucks made wh might have been moving 3L (Surface to Ramp)

3R + 2R + 1R + 5L + 4S

-1 IC MOVEMENT SUMMARY

CITY OR TOWN City Proper

South St & Surface Artery

DAY OF WEEK Thurs AM / Thurs PM WEATHER AM Sun / PM Sun RECORDER JB/KT

4/15-'88

#88207

	Surface Artery ✓ Northbound			South St ✓	✓	✓	Surface Artery Westbound ✓		South St ✓				TOTAL HALF HOURLY TALLY
	1L	1S	1R	2L	2S	2R	3S	3R	4L	4S	4R	4RR	
9													902
10	38	101	186	0	0	53	238	0	14	165	28	79	1233
00	59	216	210	0	0	78	245	0	37	282	33	73	1342
30	63	194	295	0	0	62	298	0	51	271	37	71	1377
00	58	195	354	0	0	87	281	0	50	233	42	77	1178
30	64	166	306	0	1	55	226	0	48	166	42	104	946
00	45	153	203	0	2	48	228	0	34	131	28	74	1068
30	57	152	257	4	1	74	272	0	32	106	31	82	1316
00	34	197	461	0	0	81	338	3	42	71	22	67	866
30	38	119	312	0	0	26	150	0	42	69	20	90	1623
00	43	300	435	2	3	34	429	0	84	127	57	109	1388
30	36	212	427	0	0	63	322	1	31	105	30	161	1431
00	41	288	381	2	0	54	315	0	33	99	46	172	1381
30	60	152	401	1	0	66	329	1	44	44	33	250	1353
00	61	148	397	0	0	57	352	2	56	51	28	201	1510
30	40	181	489	0	0	72	334	0	41	47	32	274	1583
00	41	191	499	0	0	62	359	1	42	53	34	301	1784
-3:30	44	201	545	1	0	72	502	0	44	57	43	275	1692
-4:00	37	165	604	1	0	62	342	2	32	70	48	329	1621
-4:30	46	159	578	0	0	45	276	1	46	73	16	381	1938
-5:00	39	207	705	0	0	75	285	0	63	105	30	429	2181
-5:30	30	272	631	0	0	64	381	0	56	77	18	652	182[illegible]
-6:00	38	292	535	0	0	57	346	0	35	31	38	451	
-6:30										504			
-7:00	121			0	0	149		0					
-7:30													
-8:00										182			
-8:30	69			0	0	129		0					
-9:00													
-9:30													
-10:00													
-10:30													
-11:00													
TOTAL	1012	4261	9211	11	7	1347	6848	11	957	2433	736	4702	GRAND TOTAL
TOTAL OF L S & R	14484			1365			6859		8828				3153

Traffic Control Systems
Planning, Engineering, Construction, & Maintenance
Brighton, Ma. Tel. (617) 782-9757

TRAFFIC MOVEMENT SUMMARY TABLE

LOCATION Essex Street & Kingston Street CITY OR TOWN Boston Proper

DATE 7/23/86 DAY OF WEEK Wednesday WEATHER Sunny RECORDER D.T. & B.

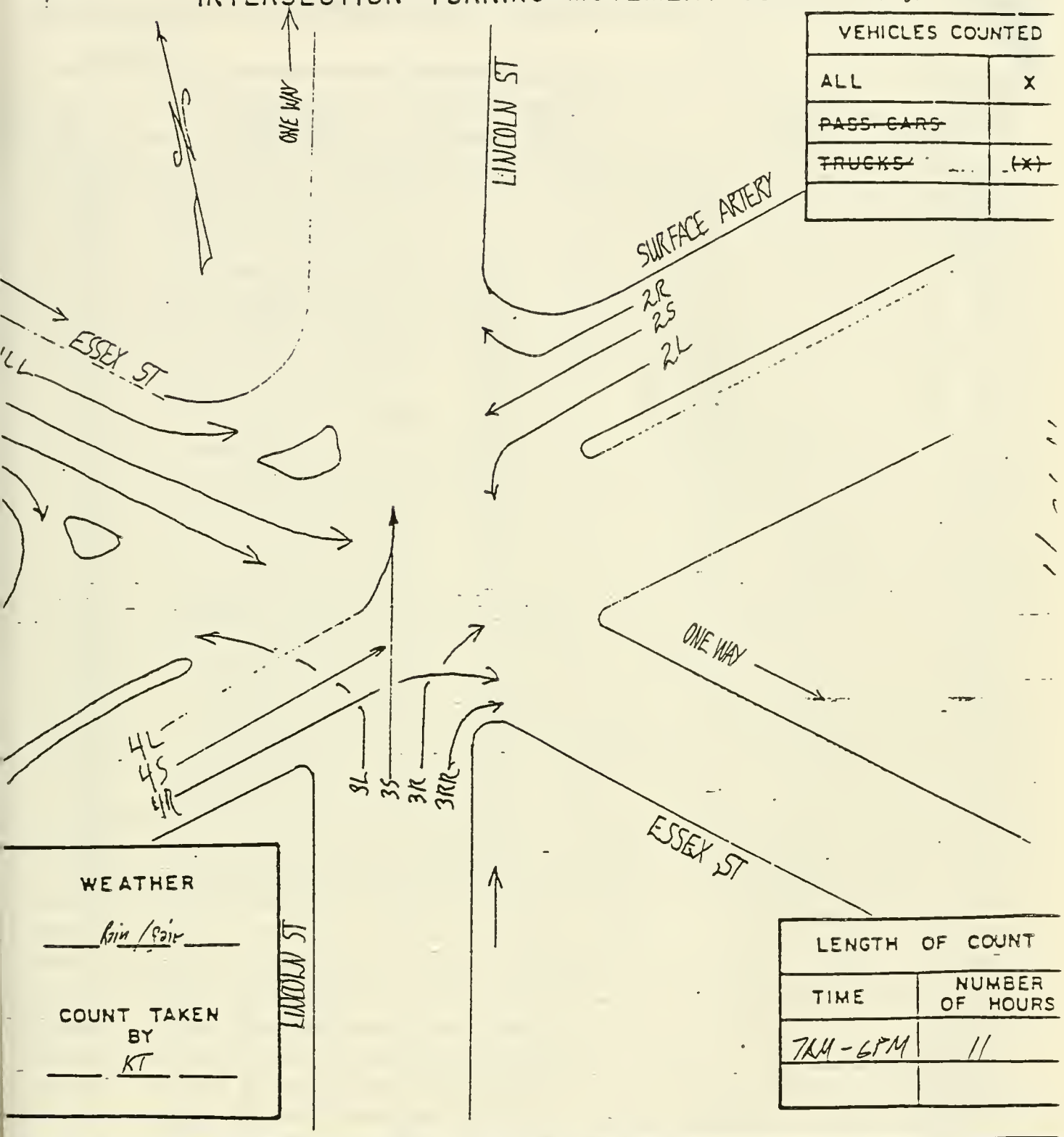
TIME STARTS M	Kingston Street Pedestrians P1	Essex Street Pedestrians P2	Kingston Street Pedestrians P3	Essex Street Pedestrians P4	TOT HALF I TAL
7:00-7:30	35	14	23	7	2
7:30-8:00	73	37	48	17	17
8:00-8:30	97	33	41	11	18
8:30-9:00	48	28	34	6	11
9:00-9:30	26	22	24	2	7
9:30-10:00	31	11	22	4	6
10:00-10:30	29	30	24	4	8
10:30-11:00	30	13	19	3	6
11:00-11:30	26	14	24	4	6
11:30-12:00	43	10	31	15	[illegible]
12:00-12:30	93	57	60	40	2
12:30-1:00	105	78	63	56	3
1:00-1:30	95	56	50	11	2
1:30-2:00	70	40	24	27	1
2:00-2:30	41	13	18	6	[illegible]
2:30-3:00	15	11	4	6	[illegible]
3:00-3:30	41	24	49	15	1
3:30-4:00	45	22	38	17	1
4:00-4:30	75	30	42	19	1
4:30-5:00	79	38	58	22	1
5:00-5:30	86	42	52	16	1
5:30-6:00	94	36	44	24	1
6:00-6:30					
6:30-7:00					
7:00-7:30					
7:30-8:00					
8:00-8:30					
8:30-9:00					
9:00-9:30					
9:30-10:00					
10:00-10:30					
10:30-11:00					
TOTAL	1277	659	792	332	GR T
TOTAL OF	1277	659	792	332	[illegible]

NT. NO.

DATE 3/14 & 16/88 DAY OF WEEK M/W

INTERSECTION TURNING MOVEMENT COUNT #88166

VEHICLES COUNTED	
ALL	X
~~PASS. CARS~~	
~~TRUCKS~~	~~(X)~~



WEATHER
Rain / Fair
COUNT TAKEN BY
KT

LENGTH OF COUNT	
TIME	NUMBER OF HOURS
7AM - 6PM	11

STREET		ENTERING VOLUME	FLOW PERCENT
1) Essex St	Eastbound	8109	27.08
2) Surface Artery	Southbound	8981	30.00
3) Lincoln St	Northbound	6868	22.94
4) Surface Artery	Northbound	5981	19.98
		29939	100.00

COMMENTS

TRAFFIC MOVEMENT SUMMARY

LOCATION Essex St, Lincoln St & Surface Artery CITY OR TOWN City Proper

DATE 3/14+16/88 DAY OF WEEK Mon/Wed WEATHER Rain/Fair RECORDER KT

88166

TIME STARTS	Essex St. Eastbound				Surface Artery Southbound			Lincoln St Northbound			
M	1LL	1L	1S	1R	2L	2S	2R	3L	3S	3R	3RR
7:00-7:30	30	129	16	34	4	216	9	15	252	80	6
7:30-8:00	81	180	24	35	30	281	3	14	225	101	4
8:00-8:30	33	248	59	51	44	405	4	36	390	139	15
8:30-9:00	44	151	17	57	28	330	8	34	303	147	17
9:00-9:30	26	162	41	53	23	256	7	27	288	119	11
9:30-10:00	31	156	35	72	18	308	5	19	233	88	7
10:00-10:30	48	219	32	93	26	331	2	18	197	73	2
10:30-11:00	59	302	66	118	22	444	4	22	186	131	14
11:00-11:30	28	217	22	103	21	408	3	10	135	60	13
11:30-12:00	24	324	21	79	33	375	6	23	121	52	15
12:00-12:30	21	161	24	59	17	303	2	13	119	51	8
12:30-1:00	34	202	32	74	30	391	4	19	204	111	13
1:00-1:30	29	180	40	69	19	298	6	25	141	77	9
1:30-2:00	36	195	27	55	27	313	5	8	166	93	14
2:00-2:30	27	188	35	48	28	367	5	20	188	69	14
2:30-3:00	30	174	47	22	16	388	6	14	126	104	7
3:00-3:30	31	210	61	33	10	492	5	22	197	140	7
3:30-4:00	47	213	76	102	28	403	7	11	148	161	6
4:00-4:30	48	211	62	121	22	389	6	12	113	139	5
4:30-5:00	56	262	37	144	15	622	4	21	99	91	4
5:00-5:30	66	218	39	150	20	555	3	13	101	116	8
5:30-6:00	42	305	31	215	16	501	4	10	88	99	4
6:00-6:30											
6:30-7:00											
7:00-7:30	AM/114	428	83	86	74	[illegible]	7	50	615	238	19
7:30-8:00											
8:00-8:30											
8:30-9:00	PM/22	480	76	294	35	[illegible]	7	34	200	207	12
9:00-9:30											
9:30-10:00											
10:00-10:30											
10:30-11:00											
TOTAL	871	4607	844	1787	497	8376	108	406	4020	2239	203
TOTAL OF L & R											

TRAFFIC MOVEMENT SUMMARY TABLE

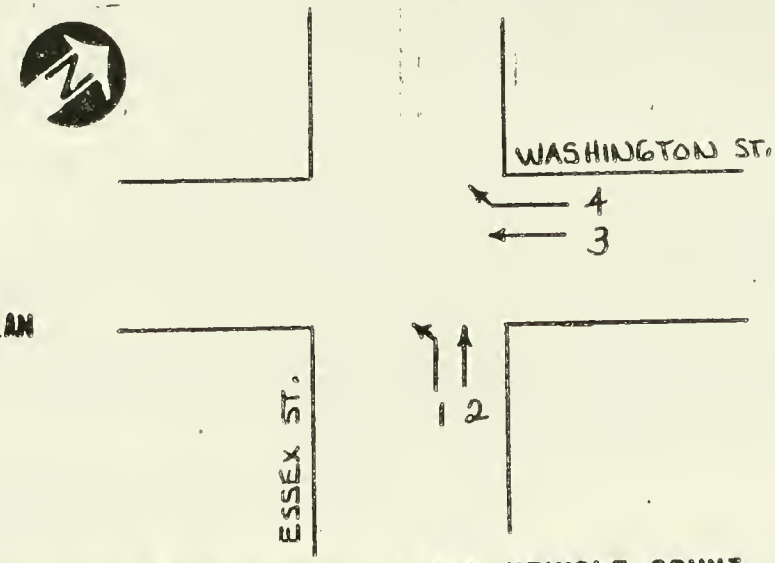
ION Essex St, Lincoln St & Surface Artery CITY OR TOWN City Proper

: 3/14+16/88 DAY OF WEEK Mon/Wed WEATHER Rain/Sun RECORDER KT 2 of 2

#88166

IE RTS M	Pa 1 Sub Total		Surface Artery Northbound 4L	4S	4R									TOTAL HALF HOUR TALLY
:30	791		29	141	30									991
:00	978		21	217	7									1223
:30	1422		16	274	5									1717
:00	1136		43	228	13									1420
:30	1013		28	211	14									1266
:00	972		27	181	26									1206
:30	1041		20	208	11									1280
:00	1368		14	210	5									1597
:30	1020		18	193	6									1237
:00	1073		10	261	4									1348
30	778		12	216	17									1023
00	1114		15	259	16									1404
30	893		13	226	10									1142
00	939		12	234	8									1193
30	989		11	229	7									1236
00	934		12	244	4									1194
30	1208		9	302	3									1522
00	1202		22	274	5									1503
30	1128		38	259	3									1428
00	1355		26	265	6									1652
30	1289		11	414	7									1721
00	1315		28	288	5									1636
10														
00			27	491	12									
30														
00			27	679	15									
30														
00														
10														
00														
30														
00														
L	23958		435	5334	212									GRAND TOTAL 29939

INTERSECTION PLAN WITH NUMBERED MOVEMENTS:



JOB NO. 2299

TOWN BOSTON

INTERSECTION WASHINGTON ST. & ESSEX ST.

DATE NOVEMBER 3, 1987

DAY OF WEEK TUESDAY

WEATHER CLEAR

RECORDER(S) RF

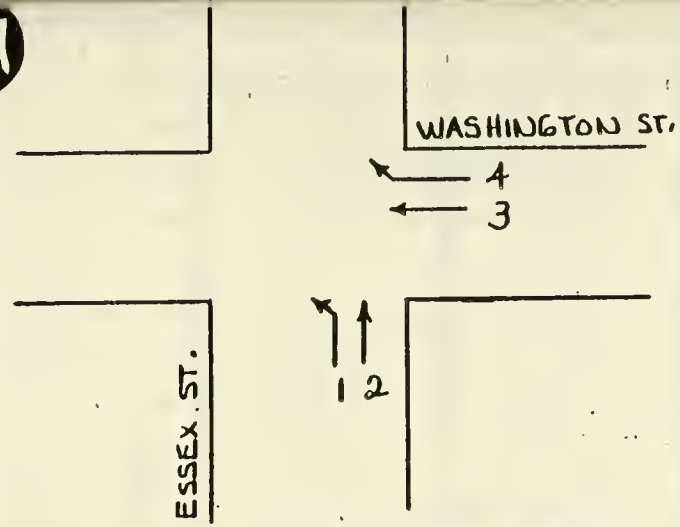
REMARKS: 12 HOUR COUNT

TOTAL VEHICLE COUNT

15 MIN. PERIOD ENDING	1		2		3		4		5		6		TOTAL VEHICLES
	AUTOS	TRUCKS	AUTOS	TRUCKS	AUTOS	TRUCKS	AUTOS	TRUCKS	AUTOS	TRUCKS	AUTOS	TRUCKS	
:00													
AM 7:15	16	0	110	4	36	2	54	6					
7:30	14	0	112	6	35	2	53	8					
7:45	8	1	118	6	43	2	57	7					
8:00	21	6	137	3	51	2	75	8					
8:15	19	2	143	9	59	3	54	8					
8:30	29	0	137	7	66	4	84	11					
8:45	34	4	155	12	63	5	70	7					
9:00	34	1	130	12	87	5	68	12					
9:15	46	2	106	5	76	5	60	9					
9:30	27	1	116	9	68	5	57	9					
9:45	40	1	113	10	56	5	71	7					
10:00	24	2	89	6	53	3	81	3					

HMM ASSOCIATES, INC.

INTERSECTION PLAN WITH NUMBERED MOVEMENTS:



JOB NO. 2299

TOWN BOSTON

INTERSECTION WASHINGTON ST. & ESSEX ST.

DATE NOVEMBER 3 1987

DAY OF WEEK TUESDAY

WEATHER CLEAR

RECORDER(S) RF / MS

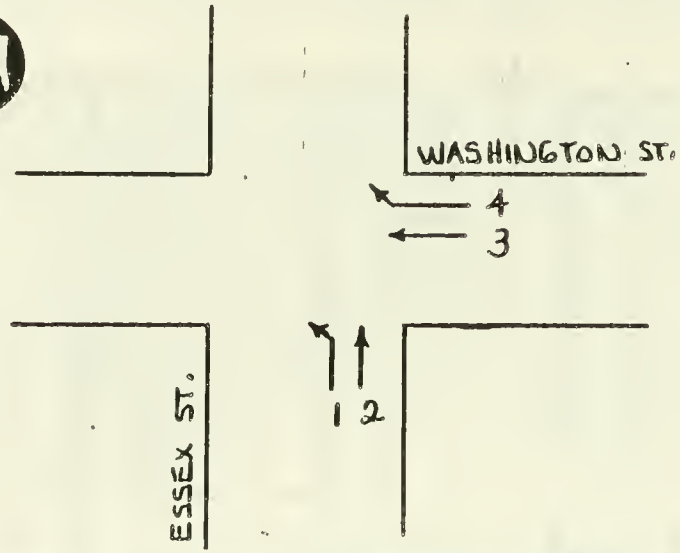
REMARKS: 12 HOUR COUNT

TOTAL VEHICLE COUNT

15 MIN. PERIOD ENDING	1		2		3		4		5		6		TOTAL VEHICLES
	AUTOS	TRUCKS	AUTOS	TRUCKS	AUTOS	TRUCKS	AUTOS	TRUCKS	AUTOS	TRUCKS	AUTOS	TRUCKS	
:00													
10:15	31	4	109	4	59	5	80	11					
10:30	19	3	99	6	53	4	72	7					
10:45	30	4	90	11	61	6	67	7					
11:00	30	1	97	10	70	2	67	7					
11:15	33	1	108	6	67	1	69	8					
11:30	36	2	95	5	73	3	86	4					
11:45	21	1	96	10	67	2	77	5					
AM 12:00	26	2	116	11	68	5	71	7					
12:15	31	1	104	6	67	2	77	5					
12:30	34	1	131	3	67	1	55	4					
12:45	36	1	113	5	60	4	61	8					
1:00	36	0	130	7	75	1	67	4					

hmm
HMM ASSOCIATES, INC.

INTERSECTION PLAN WITH NUMBERED MOVEMENTS:



JOB NO. 2299

TOWN BOSTON

INTERSECTION WASHINGTON ST. & ESSEX ST.

DATE NOVEMBER 3, 1987

DAY OF WEEK TUESDAY

WEATHER PARTLY CLOUDY

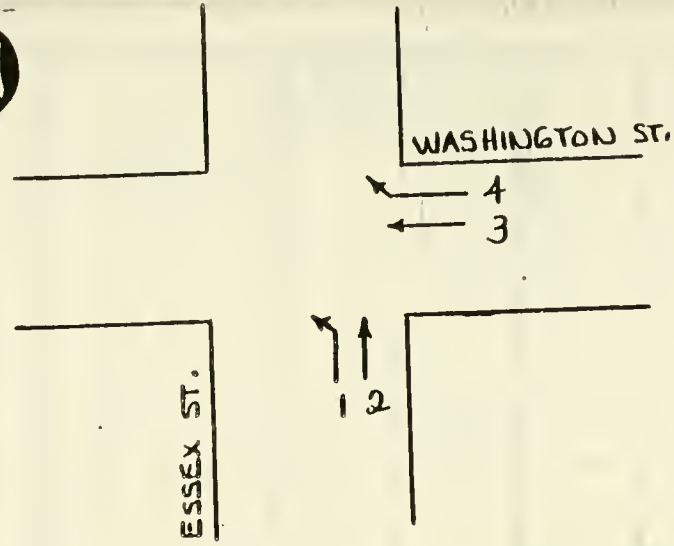
RECORDER(S) MS / RF

REMARKS: 12 HOUR COUNT

TOTAL VEHICLE COUNT

15 MIN. PERIOD ENDING	1		2		3		4		5		6		TOTAL VEHICLES
	AUTOS	TRUCKS	AUTOS	TRUCKS	AUTOS	TRUCKS	AUTOS	TRUCKS	AUTOS	TRUCKS	AUTOS	TRUCKS	
:00													
PM 1:15	29	1	102	9	77	2	57	4					
1:30	26	1	104	10	68	0	66	3					
1:45	24	1	117	12	65	2	63	8					
2:00	25	0	115	1	56	3	53	11					
2:15	36	1	139	7	73	0	82	6					
2:30	22	0	146	3	69	2	43	6					
2:45	31	0	118	6	66	1	58	7					
3:00	66	0	140	6	78	0	45	4					
3:15	23	1	119	6	56	1	59	5					
3:30	24	1	142	4	44	0	67	3					
3:45	30	0	129	5	47	1	69	7					
4:00	28	1	152	4	48	0	61	4					

INTERSECTION PLAN WITH NUMBERED MOVEMENTS:



JOB NO. 2299

TOWN BOSTON

INTERSECTION WASHINGTON ST. & ESSEX ST.

DATE NOVEMBER 3, 1987

DAY OF WEEK TUESDAY

WEATHER RAIN

RECORDER(S) RF

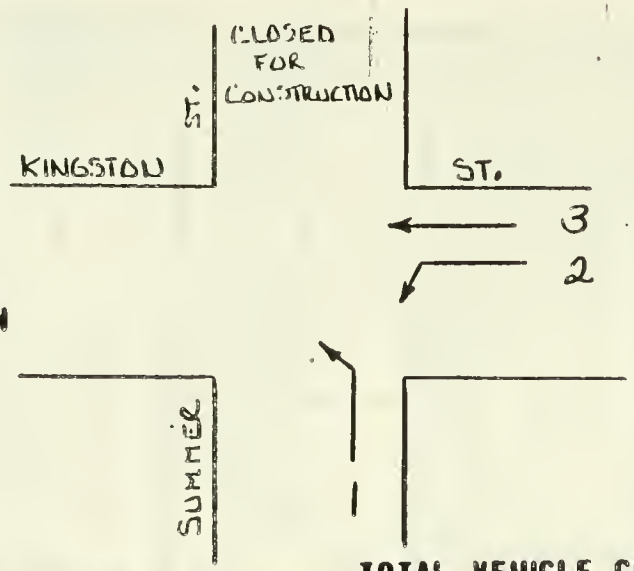
REMARKS: 12 HOUR COUNT

TOTAL VEHICLE COUNT

15 MIN. PERIOD ENDING	1		2		3		4		5		6		TOTAL VEHICLES
	AUTOS	TRUCKS	AUTOS	TRUCKS	AUTOS	TRUCKS	AUTOS	TRUCKS	AUTOS	TRUCKS	AUTOS	TRUCKS	
:00													
4:15	28	1	124	7	77	1	77	6					
4:30	23	0	138	6	54	2	108	6					
4:45	26	0	125	2	45	1	65	5					
5:00	30	0	146	5	74	0	97	7					
5:15	25	0	132	1	66	0	77	6					
5:30	24	0	131	2	56	0	81	9					
5:45	28	0	144	5	49	0	74	6					
6:00	23	0	121	2	61	0	99	6					
6:15	21	1	119	3	53	0	56	4					
6:30	29	0	130	1	69	0	83	5					
6:45	19	1	110	2	47	0	63	5					
7:00	14	0	94	0	48	0	65	1					

hmm
HMM ASSOCIATES, INC.

INTERSECTION PLAN WITH NUMBERED MOVEMENTS:



JOB NO. 2299

TOWN BOSTON

INTERSECTION KINGSTON ST. & SUMMER ST.

DATE NOVEMBER 3, 1987

DAY OF WEEK TUESDAY

WEATHER CLOUDY

RECORDER(S) JHF/SC

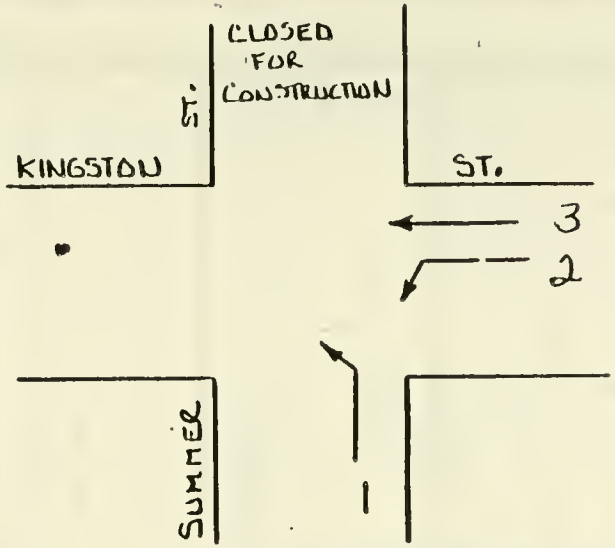
REMARKS: 12 HOUR COUNT

TOTAL VEHICLE COUNT

15 MIN. PERIOD ENDING	1		2		3		4		5		6		TOTAL VEHICLES
	AUTOS	TRUCKS	AUTOS	TRUCKS	AUTOS	TRUCKS	AUTOS	TRUCKS	AUTOS	TRUCKS	AUTOS	TRUCKS	
:00													
AM 7:15	8	1	12	6	21	1							
7:30	13	0	14	10	20	1							
7:45	18	0	11	11	24	0							
8:00	18	2	16	13	23	0							
8:15	24	0	14	14	37	1							
8:30	32	1	16	22	39	1							
8:45	30	1	10	10	25	3							
9:00	18	2	13	8	21	7							
9:15	14	2	13	10	29	7							
9:30	19	1	15	6	19	6							
9:45	20	1	18	7	25	8							
10:00	20	1	15	8	24	5							

HMM ASSOCIATES, INC.

INTERSECTION PLAN WITH NUMBERED MOVEMENTS:



JOB NO. 2299

TOWN BOSTON

INTERSECTION KINGSTON ST. & SUMMER ST.

DATE NOVEMBER 3, 1987

DAY OF WEEK TUESDAY

WEATHER CLOUDY

RECORDER(S) JHF/SC

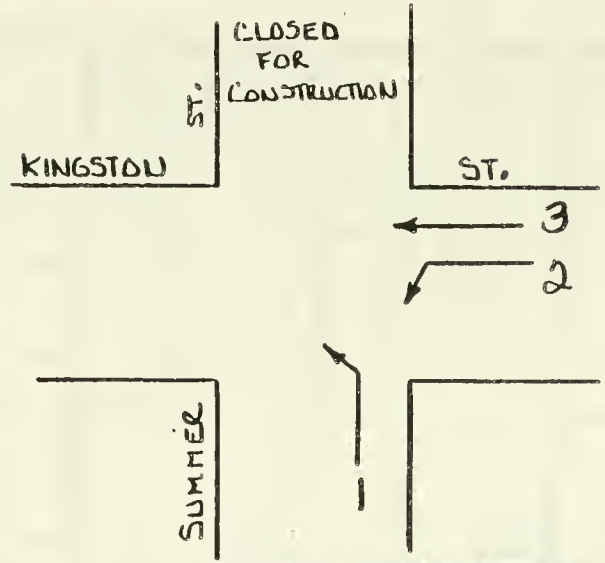
REMARKS: 12 HOUR COUNT

TOTAL VEHICLE COUNT

15 MIN. PERIOD ENDING	1		2		3		4		5		6		TOTAL VEHICLES
	AUTOS	TRUCKS	AUTOS	TRUCKS	AUTOS	TRUCKS	AUTOS	TRUCKS	AUTOS	TRUCKS	AUTOS	TRUCKS	
:00													
10:15	25	3	15	4	26	4							
10:30	20	3	14	4	17	4							
10:45	27	0	14	7	38	1							
11:00	16	1	23	5	28	5							
11:15	20	1	27	1	15	1							
11:30	22	1	24	4	31	2							
11:45	27	0	9	3	33	3							
PM 12:00	27	0	20	2	27	0							
12:15	27	1	28	7	46	0							
12:30	15	2	8	3	38	3							
12:45	18	0	20	4	21	0							
1:00													

HMM ASSOCIATES, INC.

INTERSECTION PLAN WITH NUMBERED MOVEMENTS:



JOB NO. 2299

TOWN BOSTON

INTERSECTION KINGSTON ST. & SUMMER ST.

DATE NOVEMBER 3, 1987

DAY OF WEEK TUESDAY

WEATHER RAIN

RECORDER(S) LM / SC

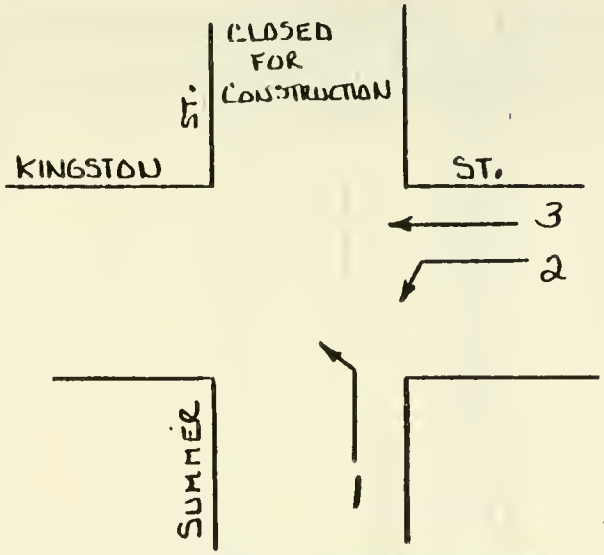
REMARKS: 12 HOUR COUNT

TOTAL VEHICLE COUNT

15 MIN. PERIOD ENDING	1		2		3		4		5		6		TOTAL VEHICLES
	AUTOS	TRUCKS	AUTOS	TRUCKS	AUTOS	TRUCKS	AUTOS	TRUCKS	AUTOS	TRUCKS	AUTOS	TRUCKS	
:00													
PM 1:15	17	4	17	3	19	1							
1:30	10	2	17	3	25	3							
1:45	19	0	10	2	28	2							
2:00	12	1	13	6	32	2							
2:15	8	3	13	3	23	2							
2:30	13	2	16	2	24	1							
2:45	16	2	11	6	26	2							
3:00	29	3	23	8	42	5							
3:15	15	2	30	8	68	2							
3:30	18	1	32	7	66	3							
3:45	16	1	23	8	48	3							
4:00	11	0	31	7	48	1							

CMI ASSOCIATES INC

INTERSECTION PLAN WITH NUMBERED MOVEMENTS:



JOB NO. 2299

TOWN BOSTON

INTERSECTION KINGSTON ST. & SUMMER ST.

DATE NOVEMBER 3, 1987

DAY OF WEEK TUESDAY

WEATHER RAIN

RECORDER(S) LM

REMARKS: 12 HOUR COUNT

TOTAL VEHICLE COUNT

15 MIN. PERIOD ENDING	1 AUTOS	1 TRUCKS	2 AUTOS	2 TRUCKS	3 AUTOS	3 TRUCKS	4 AUTOS	4 TRUCKS	5 AUTOS	5 TRUCKS	6 AUTOS	6 TRUCKS	TOTAL VEHICLES
1:00													
PM 4:15	15	1	18	8	46	2							
4:30	18	0	26	8	38	4							
4:45	19	1	19	10	40	1							
5:00	19	2	15	12	54	2							
5:15	16	1	11	14	51	1							
5:30	29	1	21	15	57	3							
5:45	24	0	17	13	39	0							
6:00	27	0	16	10	47	1							
6:15	25	5	19	7	66	0							
6:30	23	0	10	6	32	0							
6:45	17	0	8	7	35	0							
7:00	14	1	10	5	31	0							

HMM ASSOCIATES, INC.

TRAFFIC MOVEMENT SUMMARY TABLE

Project: COMMONWEALTH CENTER DEIR — Project number: 7418.02

Municipality: BOSTON, MA — Date: 9/1/88 — Day: THURSDAY — Weather: CLEAR — By: CHR
Intersection: TREMONT STREET/PARK STREET
Vehicle Type: ALL

Period	SB on TREMONT STREET				EB on PARK STREET				? on ?				? on ?				TOTALS			
	LT	TH	RT	ALL	LT	TH	RT	ALL	LT	TH	RT	ALL	LT	TH	RT	ALL	LT	TH	RT	ALL
7:00 - 7:15		196	24	220			18	18										196	42	238
7:15 - 7:30		144	23	167			9	9										144	32	176
7:30 - 7:45		192	37	229			20	20										192	57	249
7:45 - 8:00		152	51	203			14	14										152	65	217
8:00 - 8:15		181	39	220			10	10										181	49	230
8:15 - 8:30		242	52	294			30	30										242	82	324
8:30 - 8:45		196	43	239			25	25										196	68	264
8:45 - 9:00		226	51	277			25	25										226	76	302
9:00 - 9:15																				
9:15 - 9:30																				
9:30 - 9:45																				
9:45 - 10:00																				
10:00 - 10:15																				
10:15 - 10:30																				
10:30 - 10:45																				
10:45 - 11:00																				
11:00 - 11:15																				
11:15 - 11:30																				
11:30 - 11:45																				
11:45 - 12:00																				
A.M. TOTALS	0	1529	320	1,849	0	0	151	151	0	0	0		0	0	0		0	1,529	471	2,000
12:00 - 12:15																				
12:15 - 12:30																				
12:30 - 12:45																				
12:45 - 13:00																				
13:00 - 13:15																				
13:15 - 13:30																				
13:30 - 13:45																				
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14:00 - 14:15																				
14:15 - 14:30																				
14:30 - 14:45																				
14:45 - 15:00																				
15:00 - 15:15																				
15:15 - 15:30																				
15:30 - 15:45																				
15:45 - 16:00																				
16:00 - 16:15		255	51	306			40	40										255	91	346
16:15 - 16:30		247	53	300			29	29										247	82	329
16:30 - 16:45		228	43	271			30	30										228	73	301
16:45 - 17:00		278	63	341			40	40										278	103	381
17:00 - 17:15		229	57	286			38	38										229	95	324
17:15 - 17:30		206	60	266			29	29										206	89	295
17:30 - 17:45		254	60	314			43	43										254	103	357
17:45 - 18:00		230	90	320			47	47										230	137	367
P.M. TOTALS	0	1927	477	2,404	0	0	296	296	0	0	0		0	0	0		0	1,927	773	2,700
DAILY TOTALS	0	3456	797	4,253	0	0	447	447	0	0	0		0	0	0		0	3,456	1,244	4,700

Peak AM 60-min totals (8:00 - 9:00):

0	845	185	1,030	0	0	90	90	0	0	0	0	0	0	0	0	0	845	275	1,120

Peak PM 60-min totals (16:00 - 17:00):

0	1008	210	1,218	0	0	139	139	0	0	0	0	0	0	0	0	0	1,008	349	1,357

TRAFFIC MOVEMENT SUMMARY TABLE

Project: COMMONWEALTH CENTER DEIR — Project number: 7418.03

Municipality: BOSTON, MA — Date: 8/16+17/88 — Day: TUES AND WED — Weather: SUNNY,CLEAR — By: SHR
Intersection: TREMONT STREET/AVERY STREET
Vehicle Type: ALL

Period	SB on TREMONT STREET LT	TH	RT	ALL	on LT	TH	RT	ALL	on LT	TH	RT	ALL	on LT	TH	RT	ALL	TOTALS LT	TH	RT	ALL
7:00 - 7:15	17	168		185													17	168		185
7:15 - 7:30	22	195		217													22	195		217
7:30 - 7:45	20	206		226													20	206		226
7:45 - 8:00	20	233		253													20	233		253
8:00 - 8:15	26	241		267													26	241		267
8:15 - 8:30	27	214		241													27	214		241
8:30 - 8:45	35	313		348													35	313		348
8:45 - 9:00	35	248		283													35	248		283
9:00 - 9:15																				
9:15 - 9:30																				
9:30 - 9:45																				
9:45 - 10:00																				
10:00 - 10:15																				
10:15 - 10:30																				
10:30 - 10:45																				
10:45 - 11:00																				
11:00 - 11:15																				
11:15 - 11:30																				
11:30 - 11:45																				
11:45 - 12:00																				
A.M. TOTALS	202	1818	0	2,020	0	0	0		0	0	0		0	0	0		202	1,818	0	2,020
12:00 - 12:15																				
12:15 - 12:30																				
12:30 - 12:45																				
12:45 - 13:00																				
13:00 - 13:15																				
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14:30 - 14:45																				
14:45 - 15:00																				
15:00 - 15:15																				
15:15 - 15:30																				
15:30 - 15:45																				
15:45 - 16:00																				
16:00 - 16:15	46	386		432													46	386		432
16:15 - 16:30	24	317		341													24	317		341
16:30 - 16:45	49	461		510													49	461		510
16:45 - 17:00	42	323		365													42	323		365
17:00 - 17:15	29	386		415													29	386		415
17:15 - 17:30	33	405		438													33	405		438
17:30 - 17:45	41	450		491													41	450		491
17:45 - 18:00	33	307		340													33	307		340
P.M. TOTALS	297	3035	0	3,332	0	0	0		0	0	0		0	0	0		297	3,035	0	3,332
DAILY TOTALS	499	4853	0	5,352	0	0	0		0	0	0		0	0	0		499	4,853	0	5,352

Peak AM 60-min totals (8:00 - 9:00):

	123	1016	0	1,139	0	0	0	0	0	0	0	0	0	0	0	0	123	1,016	0	1,139

Peak PM 60-min totals (16:30 - 17:30):

	153	1575	0	1,728	0	0	0	0	0	0	0	0	0	0	0	0	153	1,575	0	1,728

TRAFFIC MOVEMENT SUMMARY TABLE

Project: COMMONWEALTH CENTER DEIR — Project number: 7418.03

Muncipality: BOSTON, MA — Date: 8/16+17/88 — Day: TUES AND WED — Weather: SUNNY,CLEAR — By: CHR
Intersection: WASHINGTON STREET/AVERY STREET
Vehicle Type: ALL

Period	NB on WASHINGTON STREET				EB on AVERY STREET				? on ?				? on ?				TOTALS			
	LT	TH	RT	ALL	LT	TH	RT	ALL	LT	TH	RT	ALL	LT	TH	RT	ALL	LT	TH	RT	ALL
7:00 - 7:15		30	2	32	5	1		6									5	31	2	38
7:15 - 7:30		14	1	15	7	0		7									7	14	1	22
7:30 - 7:45		62	1	63	18	2		20									18	64	1	83
7:45 - 8:00		63	5	68	10	2		12									10	65	5	80
8:00 - 8:15		69	2	71	19	1		20									19	70	2	91
8:15 - 8:30		70	10	80	10	1		11									10	71	10	91
8:30 - 8:45		83	4	87	18	2		20									18	85	4	107
8:45 - 9:00		122	12	134	30	1		31									30	123	12	165
9:00 - 9:15																				
9:15 - 9:30																				
9:30 - 9:45																				
9:45 - 10:00																				
10:00 - 10:15																				
10:15 - 10:30																				
10:30 - 10:45																				
10:45 - 11:00																				
11:00 - 11:15																				
11:15 - 11:30																				
11:30 - 11:45																				
11:45 - 12:00																				
A.M. TOTALS	0	513	37	550	117	10	0	127	0	0	0		0	0	0		117	523	37	677
12:00 - 12:15																				
12:15 - 12:30																				
12:30 - 12:45																				
12:45 - 13:00																				
13:00 - 13:15																				
13:15 - 13:30																				
13:30 - 13:45																				
13:45 - 14:00																				
14:00 - 14:15																				
14:15 - 14:30																				
14:30 - 14:45																				
14:45 - 15:00																				
15:00 - 15:15																				
15:15 - 15:30																				
15:30 - 15:45																				
15:45 - 16:00																				
16:00 - 16:15		81	9	90	27	3		30									27	84	9	120
16:15 - 16:30		64	11	75	32	1		33									32	65	11	108
16:30 - 16:45		67	5	72	27	7		34									27	74	5	106
16:45 - 17:00		70	5	75	39	3		42									39	73	5	117
17:00 - 17:15		53	14	67	23	4		27									23	57	14	94
17:15 - 17:30		70	13	83	23	2		25									23	72	13	108
17:30 - 17:45		83	6	89	34	2		36									34	85	6	125
17:45 - 18:00		64	9	73	35	2		37									35	66	9	110
P.M. TOTALS	0	552	72	624	240	24	0	264	0	0	0		0	0	0		240	576	72	888
DAILY TOTALS	0	1065	109	1,174	357	34	0	391	0	0	0		0	0	0		357	1,099	109	1,565

Peak AM 60-min totals (8:00 - 9:00):

0	344	28	372	77	5	0	82	0	0	0	0	0	0	0	0	77	349	28	454

Peak PM 60-min totals (16:00 - 17:00):

0	282	30	312	125	14	0	139	0	0	0	0	0	0	0	0	125	296	30	451

HMM ASSOCIATES
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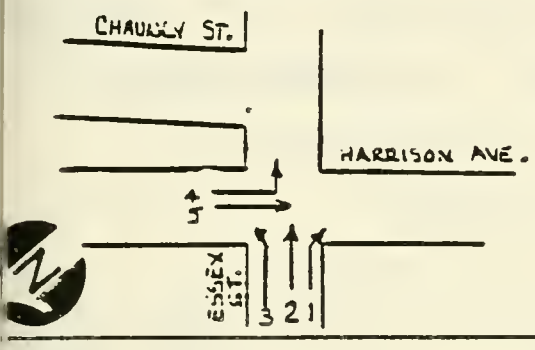
GEOMETRY



JOB NO: 2299 TOWN/CITY: BOSTON DATE: 11/3/87

DAY OF WEEK: TUESDAY WEATHER: CLOUDY RECORDERS: CK

INTERSECTION: HARRISON AVE./ESSEX ST./CHAUNCY ST. # 8

REMARKS:

PEAK HOUR AT THIS LOCATION: 8:00-9:00 AM

PEAK HOUR FOR THE STUDY AREA: 8:00-9:00 AM

VEHICLE COUNT

	1		2		3		4		5		6		
ME PERIOD	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	
:00-7:15 AM	16	1	62	3	20	5	12	2	14	0			
15-7:30 AM	33	1	115	4	31	9	8	0	11	1			
:30-7:45 AM	32	1	119	7	42	8	14	1	12	1			
:45-8:00 AM	29	0	115	7	50	9	12	3	8	0			
:00-8:15 AM	38	1	123	7	46	5	10	1	9	0	240		
:15-8:30 AM	31	3	118	12	67	11	13	2	18	2	277		
:30-8:45 AM	29	0	129	7	48	7	16	2	12	3	253		
:45-9:00 AM	34	3	135	16	45	8	19	2	12	0	274		
DY AREA PEAK													
UR VOLUMES													
AL: VEHICLES	139		547		237		65		56				
% TRUCKS		5%		8%		13%		11%		9%			

HMM ASSOCIATES
COUNTSUM8
TRAFFIC ANALYSIS

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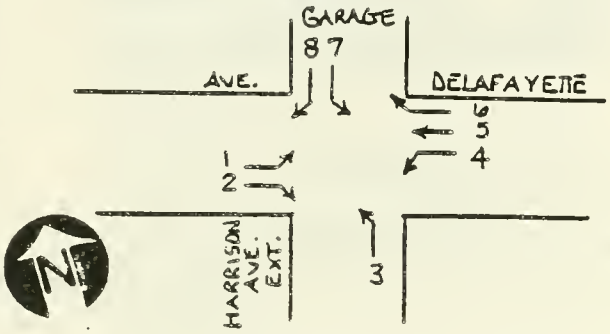
GEOMETRY



JOB NO: 2299 TOWN/CITY: BOSTON DATE: 10/29/

DAY OF WEEK: THURSDAY WEATHER: CLEAR RECORDERS: SG

INTERSECTION: AVE. DELAFAYETTE & HARRISON AVE. EXT.

REMARKS:

PEAK HOUR AT THIS LOCATION: 8:00-9:00 AM

PEAK HOUR FOR THE STUDY AREA: 8:00-9:00 AM

VEHICLE COUNT

	1		2		3		4		5		6	
TIME PERIOD	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS
7:00-7:15 AM	8	0	7	1	1	0	9	0	4	1	4	
7:15-7:30 AM	12	0	2	0	0	0	11	2	6	0	10	
7:30-7:45 AM	16	0	4	0	0	0	15	0	8	2	9	
7:45-8:00 AM	20	0	8	0	1	0	6	1	8	0	19	
8:00-8:15 AM	19	0	11	0	1	0	14	0	16	5	18	
8:15-8:30 AM	28	0	17	0	2	0	19	6	14	2	29	
8:30-8:45 AM	19	1	12	1	1	0	12	0	19	0	25	
8:45-9:00 AM	18	3	17	1	0	0	22	2	21	1	24	
STUDY AREA PEAK HOUR VOLUMES												
TOTAL: VEHICLES	88		59		4		75		78		97	
% TRUCKS		5%		3%		0%		11%		10%		1

VEHICLE COUNT

	7		8		9		10		11		12	
TIME PERIOD	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS
7:00-7:15 AM	0	0	0	0								
7:15-7:30 AM	0	0	0	0								
7:30-7:45 AM	0	0	0	0								
7:45-8:00 AM	0	0	0	0								
8:00-8:15 AM	0	0	0	0	64							
8:15-8:30 AM	1	0	0	0	10							
8:30-8:45 AM	0	0	0	0	90							
8:45-9:00 AM	0	0	0	0	110							
STUDY AREA PEAK HOUR VOLUMES												
TOTAL: VEHICLES	1		0									
%TRUCKS		0%		0%								

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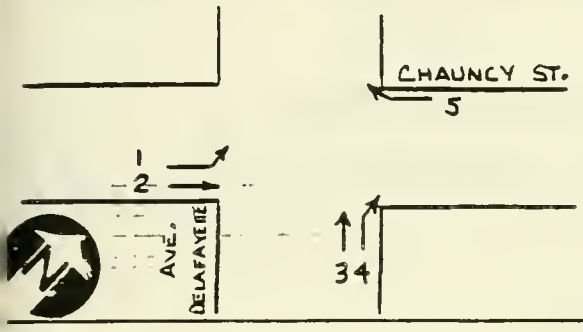
GEOMETRY



JOB NO: 2299 TOWN/CITY: BOSTON DATE: 10/29/87

DAY OF WEEK: THURSDAY WEATHER: CLEAR RECORDERS: CK

INTERSECTION: CHAUNCY ST. & AVE. DELAFAYETTE

REMARKS:

PEAK HOUR AT THIS LOCATION: 8:00-9:00 AM

PEAK HOUR FOR THE STUDY AREA: 8:00-9:00 AM

VEHICLE COUNT

	1		2		3		4		5		6		
TIME PERIOD	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	
7:00-7:15 AM	5	1	19	6	3	0	5	0	12	1			
7:15-7:30 AM	3	0	31	6	3	0	1	0	23	2			
7:30-7:45 AM	5	0	40	7	4	0	5	0	40	2			
7:45-8:00 AM	2	0	42	10	3	1	1	0	33	0			
8:00-8:15 AM	7	1	57	7	4	0	1	0	42	6			125
8:15-8:30 AM	11	0	54	13	6	1	1	0	53	5			144
8:30-8:45 AM	2	0	52	6	7	0	2	0	41	2			112
8:45-9:00 AM	11	0	53	13	8	1	2	0	45	5			138
UDY AREA PEAK													
OUR VOLUMES													
TAL: VEHICLES	32		255		27		6		199				
% TRUCKS		3%		15%		7%		0%		9%			

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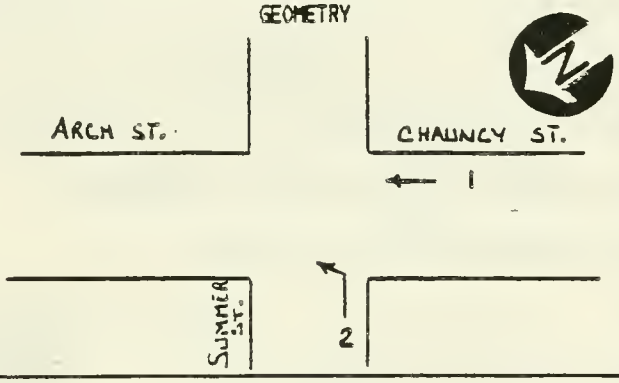
GEOMETRY



JOB NO: 2299 TOWN/CITY: BOSTON DATE: 11/5

DAY OF WEEK: THURSDAY WEATHER: CLOUDY RECORDERS: CK

INTERSECTION: SUMMER ST. & ARCH ST.

REMARKS:

PEAK HOUR AT THIS LOCATION: 8:00-9:00 AM

PEAK HOUR FOR THE STUDY AREA: 8:00-9:00 AM

VEHICLE COUNT

	1		2		3		4		5		6	
TIME PERIOD	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	T
7:00-7:15 AM	29	0	8	0								
7:15-7:30 AM	38	2	9	4								
7:30-7:45 AM	46	2	5	2								
7:45-8:00 AM	42	4	4	2								
8:00-8:15 AM	41	1	8	3	53							
8:15-8:30 AM	58	5	5	4	72							
8:30-8:45 AM	54	3	10	2	69							
8:45-9:00 AM	51	5	7	4	67							
STUDY AREA PEAK HOUR VOLUMES												
TOTAL: VEHICLES	218		43									
% TRUCKS		6%		30%								

HMM ASSOCIATES
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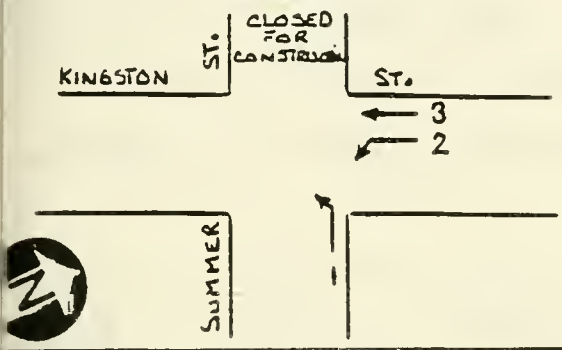
GEOMETRY



JOB NO: 2299 TOWN/CITY: BOSTON DATE: 11/3/87

DAY OF WEEK: TUESDAY WEATHER: CLOUDY RECORDERS: JHF/SC

INTERSECTION: KINGSTON ST. & SUMMER ST.

REMARKS:

PEAK HOUR AT THIS LOCATION: 7:45-8:45 AM

PEAK HOUR FOR THE STUDY AREA: 8:00-9:00 AM

VEHICLE COUNT

	1		2		3		4		5		6	
ME PERIOD	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS
:00-7:15 AM	8	1	12	6	21	1						
:15-7:30 AM	13	0	14	10	20	1						
:30-7:45 AM	18	0	11	11	24	0						
:45-8:00 AM	18	2	16	13	23	0						
:00-8:15 AM	24	0	14	14	37	1						
:15-8:30 AM	32	1	16	22	39	1						
:30-8:45 AM	30	1	10	10	25	3						
:45-9:00 AM	18	2	13	8	21	7						
DY AREA PEAK												
UR VOLUMES												
AL: VEHICLES	108		107		134							
% TRUCKS		4%		50%		9%						

HMM ASSOCIATES
COUNTSUM0
TRAFFIC ANALYSIS

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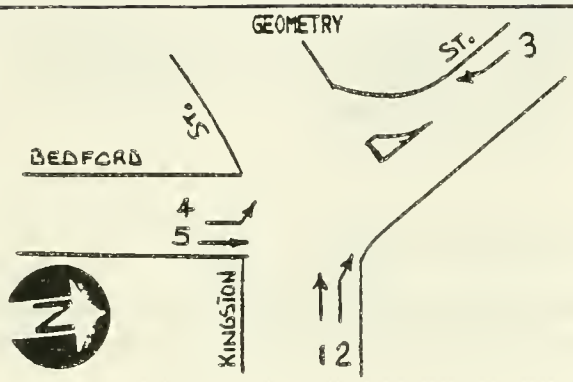
GEOMETRY



JOB NO: 2299 TOWN/CITY: BOSTON DATE: 11/3/

DAY OF WEEK: TUESDAY WEATHER: CLOUDY RECORDERS: SG

INTERSECTION: KINGSTON ST. & BEDFORD ST.

REMARKS:

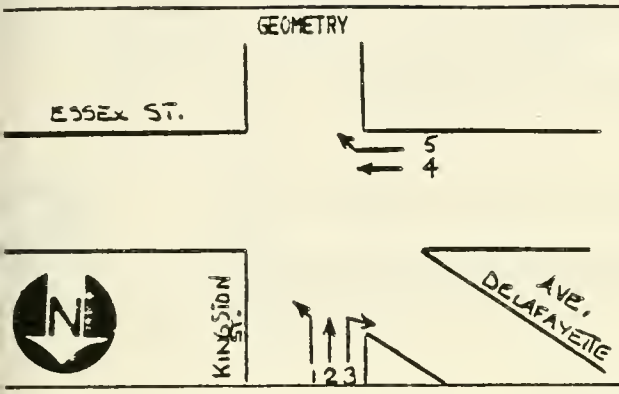
PEAK HOUR AT THIS LOCATION: 8:00-9:00 AM

PEAK HOUR FOR THE STUDY AREA: 8:00-9:00 AM

VEHICLE COUNT

	1		2		3		4		5		6	
TIME PERIOD	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TR
7:00-7:15 AM	20	1	11	1	4	8	11	1	30	3		
7:15-7:30 AM	18	1	11	3	3	5	8	0	31	3		
7:30-7:45 AM	20	0	13	0	11	9	14	0	41	2		
7:45-8:00 AM	31	1	8	4	9	4	25	0	42	6		
8:00-8:15 AM	31	2	17	1	11	4	18	0	53	5	42	
8:15-8:30 AM	27	2	13	2	3	4	20	1	51	5	128	
8:30-8:45 AM	34	8	26	2	7	8	14	1	48	3	151	
8:45-9:00 AM	15	10	16	0	11	7	20	1	76	1	157	
STUDY AREA PEAK HOUR VOLUMES												
TOTAL: VEHICLES	129		77		55		75		242			
% TRUCKS		17%		6%		42%		4%		6%		

HMM ASSOCIATES
COUNTSUM8
TRAFFIC ANALYSIS



JOB NO: 2299 TOWN/CITY: BOSTON DATE: 11/03/87

DAY OF WEEK: TUESDAY WEATHER: CLOUDY RECORDERS: DC

INTERSECTION: KINGSTON ST./ESSEX ST./AVE. DELAFAYETTE

REMARKS:

PEAK HOUR AT THIS LOCATION: 7:00-8:00 AM

PEAK HOUR FOR THE STUDY AREA: 8:00-9:00 AM

VEHICLE COUNT

	1		2		3		4		5		6	
TIME PERIOD	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS
7:00-7:15 AM	131	7	9	1	8	2	83	4	7	0		
7:15-7:30 AM	28	9	9	1	2	0	98	4	3	0		
7:30-7:45 AM	29	7	20	1	3	0	98	12	4	0		
7:45-8:00 AM	27	10	18	1	2	0	104	0	0	0		
8:00-8:15 AM	25	4	11	0	3	3	102	9	0	0		
8:15-8:30 AM	24	5	3	0	8	0	78	6	1	0		
8:30-8:45 AM	14	12	9	0	6	0	73	7	1	0		
8:45-9:00 AM	16	6	5	0	5	1	81	5	0	0		
TUDY AREA PEAK HOUR VOLUMES												
OTAL: VEHICLES	106		28		23		368		2			
% TRUCKS		25%		0%		4%		7%		0%		

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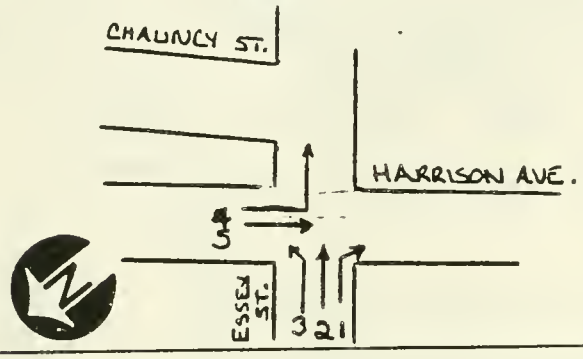
GEOMETRY



JOB NO: 2299 TOWN/CITY: BOSTON DATE: 11/3/

DAY OF WEEK: TUESDAY WEATHER: CLEAR RECORDERS: CK

INTERSECTION: HARRISON AVE./ESSEX ST./CHAUNCY ST. # 8

REMARKS:

PEAK HOUR AT THIS LOCATION: 4:00-5:00 PM

PEAK HOUR FOR THE STUDY AREA: 4:45-5:45 PM

VEHICLE COUNT

	1		2		3		4		5		6	
TIME PERIOD	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TR
4:00-4:15 PM	48	0	125	8	27	5	42	0	40	1		
4:15-4:30 PM	50	2	118	6	35	6	34	2	50	0		
4:30-4:45 PM	50	0	122	3	34	4	19	3	32	0		
4:45-5:00 PM	41	1	123	3	48	3	38	5	44	2	208	
5:00-5:15 PM	21	1	99	2	34	3	27	0	38	0	225	
5:15-5:30 PM	46	2	113	3	47	6	33	1	52	0	~~252~~ 303	
5:30-5:45 PM	34	1	128	3	53	7	23	0	62	2	313	
5:45-6:00 PM	50	0	114	7	54	5	35	2	44	2	1098	
STUDY AREA PEAK HOUR VOLUMES												
TOTAL: VEHICLES	147		474		201		127		200			
% TRUCKS		3%		2%		9%		5%		2%		

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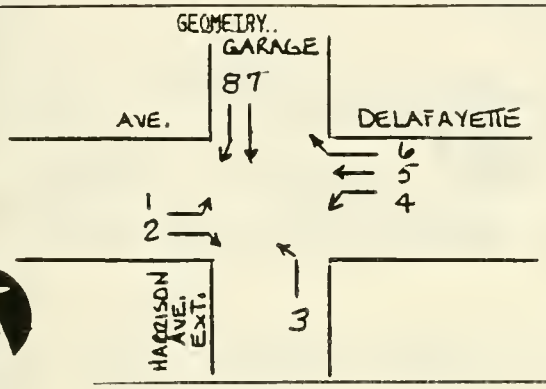

JOB NO: 2299 TOWN/CITY: BOSTON DATE: 10/29/87

DAY OF WEEK: THURSDAY WEATHER: CLEAR RECORDERS: SC

INTERSECTION: AVE. DELAFAYETTE & HARRISON AVE. EXT. #9

REMARKS:

PEAK HOUR AT THIS LOCATION: 5:00-6:00 PM

PEAK HOUR FOR THE STUDY AREA: 4:45-5:45 PM

VEHICLE COUNT

	1		2		3		4		5		6	
IME PERIOD	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS
:00-4:15 PM	8	0	19	0	0	0	32	3	35	1	6	0
:15-4:30 PM	11	0	18	0	1	0	37	0	20	0	5	0
:30-4:45 PM	11	0	23	0	0	0	34	0	25	0	2	0
:45-5:00 PM	10	0	31	0	0	0	28	0	37	0	6	0
:00-5:15 PM	18	0	36	0	0	0	38	1	32	0	2	0
:15-5:30 PM	12	0	32	0	0	0	37	0	40	0	3	0
:30-5:45 PM	10	0	32	1	0	0	35	1	38	0	4	0
:45-6:00 PM	12	0	30	0	1	0	38	1	31	0	3	0
DY AREA PEAK												
UR VOLUMES												
AL: VEHICLES	50		132		0		140		147		15	
% TRUCKS		0%		1%		0%		1%		0%		0%

VEHICLE COUNT

	7		8		9		10		11		12	
IME PERIOD	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS
:00-4:15 PM	19	0	5	0								
:15-4:30 PM	11	0	1	0								
:30-4:45 PM	15	0	5	0								
:45-5:00 PM	12	0	4	0	128							
:00-5:15 PM	21	0	5	0	153							
:15-5:30 PM	21	0	9	0	154							
:30-5:45 PM	19	0	7	0	147							
:45-6:00 PM	23	0	9	0								
DY AREA PEAK												
UR VOLUMES												
AL: VEHICLES	73		25									
%TRUCKS		0%		0%								

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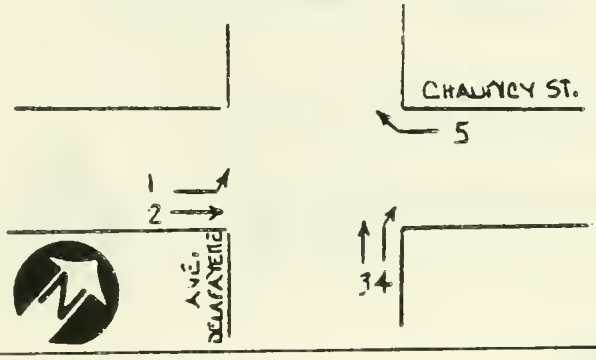

JOB NO: 2299 TOWN/CITY: BOSTON DATE: 10/29/

DAY OF WEEK: THURSDAY WEATHER: CLEAR RECORDERS: CK

INTERSECTION: CHAUNCY ST. & AVE. DELAFAYETTE #10

REMARKS:

PEAK HOUR AT THIS LOCATION: 5:00-6:00 PM

PEAK HOUR FOR THE STUDY AREA: 4:45-5:45 PM

VEHICLE COUNT

	1		2		3		4		5		6	
TIME PERIOD	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRC
4:00-4:15 PM	11	1	36	5	18	1	4	0	35	2		
4:15-4:30 PM	8	0	54	5	14	0	4	1	32	0		
4:30-4:45 PM	10	0	54	6	6	0	2	0	46	2		
4:45-5:00 PM	13	0	56	6	8	0	4	0	42	0	129	
5:00-5:15 PM	11	0	57	6	14	0	6	1	43	2	140	
5:15-5:30 PM	5	0	63	4	17	0	5	0	54	0	148	
5:30-5:45 PM	9	0	55	6	11	0	9	1	48	1	140	
5:45-6:00 PM	10	0	65	4	5	0	3	0	42	1		
STUDY AREA PEAK HOUR VOLUMES												
TOTAL: VEHICLES	38		253		50		26		190			
% TRUCKS		0%		9%		0%		8%		2%		

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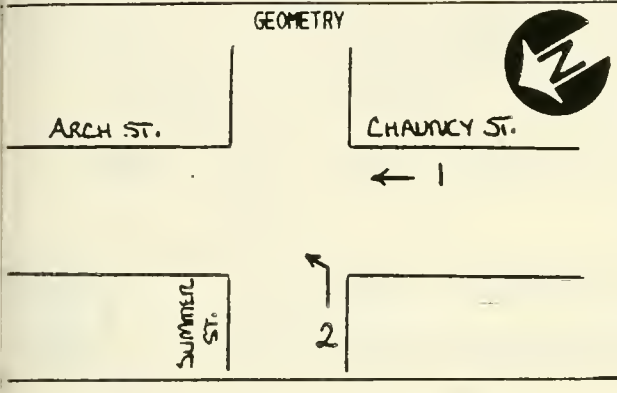

JOB NO: 2299 TOWN/CITY: BOSTON DATE: 11/5/87

DAY OF WEEK: THURSDAY WEATHER: CLEAR RECORDERS: CK

INTERSECTION: SUMMER ST. & ARCH ST. # 11

REMARKS:

PEAK HOUR AT THIS LOCATION: 5:00-6:00 PM

PEAK HOUR FOR THE STUDY AREA: 4:45-5:45 PM

VEHICLE COUNT

	1		2		3		4		5		6	
TIME PERIOD	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS
4:00-4:15 PM	57	3	14	1								
4:15-4:30 PM	63	2	18	0								
4:30-4:45 PM	73	2	6	0								
4:45-5:00 PM	60	1	14	0	75							
5:00-5:15 PM	82	2	12	1	97							
5:15-5:30 PM	83	0	16	0	99							
5:30-5:45 PM	94	0	18	0	112							
5:45-6:00 PM	90	2	14	0								
UDY AREA PEAK												
OUR VOLUMES												
TAL: VEHICLES	322		61									
% TRUCKS		1%		2%								

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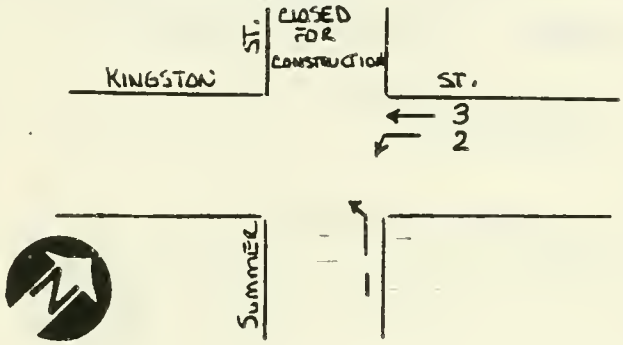

JOB NO: 2299 TOWN/CITY: BOSTON DATE: 11/3/87

DAY OF WEEK: TUESDAY WEATHER: RAIN RECORDERS: LM

INTERSECTION: KINGSTON ST. & SUMMER ST. #12

REMARKS:

PEAK HOUR AT THIS LOCATION: 4:45-5:45 PM

PEAK HOUR FOR THE STUDY AREA: 4:45-5:45 PM

VEHICLE COUNT

	1		2		3		4		5		6	
TIME PERIOD	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS
4:00-4:15 PM	15	1	18	8	46	2						
4:15-4:30 PM	18	0	26	8	38	4						
4:30-4:45 PM	19	1	19	10	40	1						
4:45-5:00 PM	19	2	15	12	54	2						
5:00-5:15 PM	16	1	11	14	51	1						
5:15-5:30 PM	29	1	21	15	57	3						
5:30-5:45 PM	24	0	17	13	39	0						
5:45-6:00 PM	27	0	16	10	47	1						
STUDY AREA PEAK HOUR VOLUMES												
TOTAL: VEHICLES	92		118		207							
% TRUCKS		4%		46%		3%						

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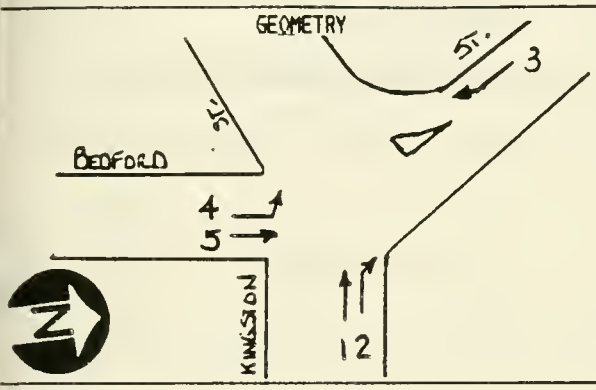

JOB NO: 2299 TOWN/CITY: BOSTON DATE: 11/3/87

DAY OF WEEK: TUESDAY WEATHER: RAIN RECORDERS: SG

INTERSECTION: KINGSTON ST. & BEDFORD ST. # 13

REMARKS:

PEAK HOUR AT THIS LOCATION: 5:00-6:00 PM

PEAK HOUR FOR THE STUDY AREA: 4:45-5:45 PM

VEHICLE COUNT

	1		2		3		4		5		6	
TIME PERIOD	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS
4:00-4:15 PM	64	1	14	1	23	3	20	0	34	1		
4:15-4:30 PM	54	3	20	1	19	5	20	1	26	1		
4:30-4:45 PM	60	1	24	0	22	3	14	0	22	2		
4:45-5:00 PM	56	0	22	0	34	6	16	0	25	2	161	
5:00-5:15 PM	62	0	22	0	36	4	17	1	32	1	175	
5:15-5:30 PM	56	3	35	1	28	6	18	1	49	2	199	
5:30-5:45 PM	71	0	23	0	35	4	25	0	41	1	200	
5:45-6:00 PM	58	1	31	1	24	6	24	0	36	3		
TUDY AREA PEAK HOUR VOLUMES												
OTAL: VEHICLES	248		103		153		78		153			
% TRUCKS		1%		1%		13%		3%		4%		

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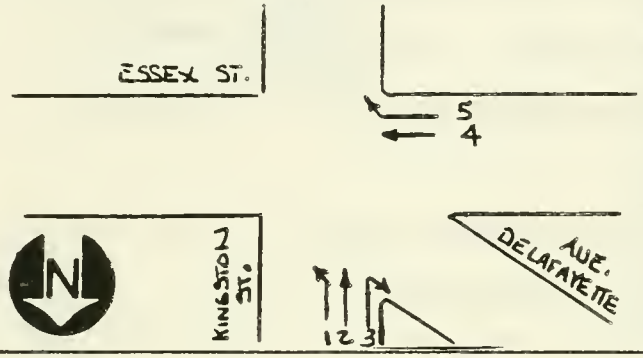

JOB NO: 2299 TOWN/CITY: BOSTON DATE: 11/4

DAY OF WEEK: WEDNESDAY WEATHER: CLOUDY RECORDERS: DC

INTERSECTION: KINGSTON ST./ESSEX ST./AVE. DELAFAYETTE #14

REMARKS:

PEAK HOUR AT THIS LOCATION: 4:00-5:00 PM

PEAK HOUR FOR THE STUDY AREA: 4:45-5:45 PM

VEHICLE COUNT

	1		2		3		4		5		6
TIME PERIOD	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS
4:00-4:15 PM	44	3	39	0	13	0	137	2	13	0	251
4:15-4:30 PM	65	7	30	1	15	0	111	5	9	0	243
4:30-4:45 PM	62	3	38	0	14	0	156	3	10	1	287
4:45-5:00 PM	73	4	33	0	15	0	147	1	9	0	282
5:00-5:15 PM	70	4	27	0	15	0	103	2	5	1	227
5:15-5:30 PM	46	2	26	0	18	0	119	2	0	0	213
5:30-5:45 PM	27	3	17	0	14	0	97	2	0	0	150
5:45-6:00 PM	31	3	20	0	9	0	72	0	3	0	
STUDY AREA PEAK HOUR VOLUMES											
TOTAL: VEHICLES	229		103		62		463		15		
% TRUCKS		6%		0%		0%		2%		7%	

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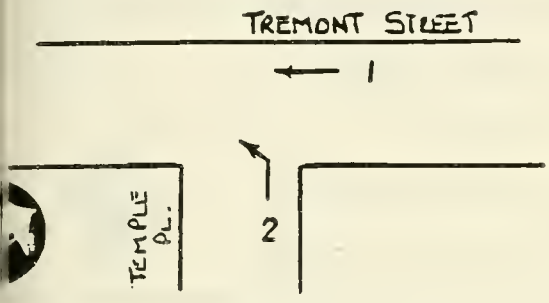

JOB NO: 2299 TOWN/CITY: BOSTON DATE: 10/29/87

DAY OF WEEK: THURSDAY WEATHER: CLEAR RECORDERS: MS

INTERSECTION: TREMONT ST. & TEMPLE PL. # 1

REMARKS:

PEAK HOUR AT THIS LOCATION: 8:00-9:00 AM

PEAK HOUR FOR THE STUDY AREA: 8:00-9:00 AM

VEHICLE COUNT

	1		2		3		4		5		6	
PERIOD	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS
-7:15 AM	176	29	5	2								
-7:30 AM	142	15	13	1								
-7:45 AM	193	19	18	2								
-8:00 AM	193	22	18	2								
-8:15 AM	205	24	21	2	151							
-8:30 AM	201	22	21	2	246							
-8:45 AM	167	31	23	3	224							
-9:00 AM	186	32	30	2	150							
AREA PEAK VOLUMES												
VEHICLES	868		104									
% TRUCKS		13%		9%								

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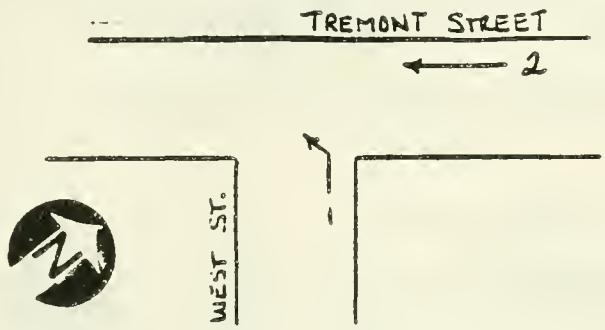

JOB NO: 2299 TOWN/CITY: BOSTON DATE: 10/29

DAY OF WEEK: THURSDAY WEATHER: CLEAR RECORDERS: RF

INTERSECTION: TREMONT ST. & WEST ST. #2

REMARKS:

PEAK HOUR AT THIS LOCATION: 8:00-9:00 AM

PEAK HOUR FOR THE STUDY AREA: 8:00-9:00 AM

VEHICLE COUNT

	1		2		3		4		5		6	
TIME PERIOD	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TI
7:00-7:15 AM	9	1	177	25								
7:15-7:30 AM	14	0	149	16								
7:30-7:45 AM	21	2	213	23								
7:45-8:00 AM	30	1	206	25								
8:00-8:15 AM	29	4	225	28	286							
8:15-8:30 AM	20	4	207	20	251							
8:30-8:45 AM	40	2	203	35	280							
8:45-9:00 AM	28	2	210	36	276							
STUDY AREA PEAK HOUR VOLUMES												
TOTAL: VEHICLES	129		964									
% TRUCKS		9%		12%								

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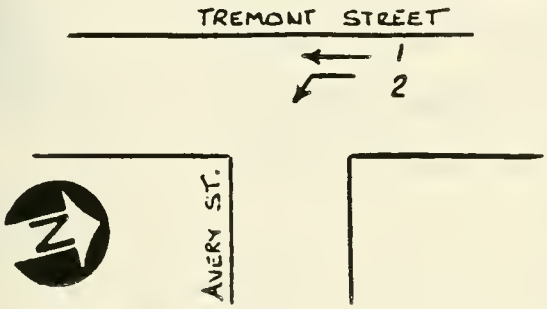

JOB NO: 2299 TOWN/CITY: BOSTON DATE: 10/29/87

DAY OF WEEK: THURSDAY WEATHER: CLEAR RECORDERS: LM

INTERSECTION: TREMONT ST. & AVERY ST. #3

REMARKS:

PEAK HOUR AT THIS LOCATION: 8:00-9:00 AM

PEAK HOUR FOR THE STUDY AREA: 8:00-9:00 AM

VEHICLE COUNT

	1		2		3		4		5		6	
TIME PERIOD	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS
7:00-7:15 AM	94	18	6	0								
7:15-7:30 AM	179	14	10	0								
7:30-7:45 AM	160	15	18	3								
7:45-8:00 AM	191	19	37	2								
8:00-8:15 AM	202	23	31	3	254							
8:15-8:30 AM	188	22	32	4	246							
8:30-8:45 AM	192	20	35	6	253							
8:45-9:00 AM	210	29	26	1	266							
STUDY AREA PEAK HOUR VOLUMES												
TOTAL VEHICLES	886		138									
% TRUCKS		11%		10%								

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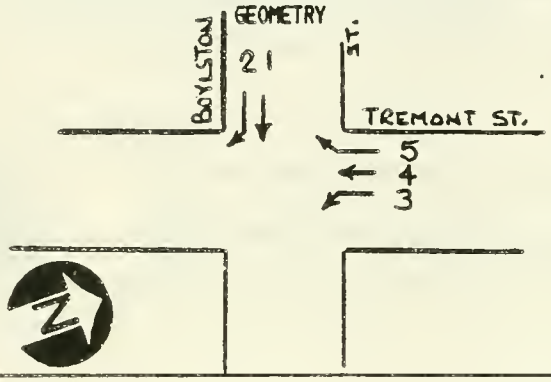

JOB NO: 2299 TOWN/CITY: BOSTON DATE: 1

DAY OF WEEK: THURSDAY WEATHER: CLEAR RECORDERS: JHF/A

INTERSECTION: TREMONT ST. & BOYLSTON ST. Dusen

REMARKS:

PEAK HOUR AT THIS LOCATION: 8:00-9:00 AM

PEAK HOUR FOR THE STUDY AREA: 8:00-9:00 AM

VEHICLE COUNT

TIME PERIOD	1 AUTOS	1 TRCKS	2 AUTOS	2 TRCKS	3 AUTOS	3 TRCKS	4 AUTOS	4 TRCKS	5 AUTOS	5 TRCKS	6 AUTOS
7:00-7:15 AM	86	3	17	1	129	0	114	10	15	0	
7:15-7:30 AM	91	4	20	1	24	0	116	15	17	0	
7:30-7:45 AM	124	7	28	4	26	4	160	13	16	0	
7:45-8:00 AM	133	7	27	2	30	2	150	12	29	0	
8:00-8:15 AM	122	9	31	3	27	3	136	12	33	0	376
8:15-8:30 AM	132	10	31	3	34	6	159	9	38	0	422
8:30-8:45 AM	139	5	33	1	20	5	136	7	29	0	~~236~~
8:45-9:00 AM	142	15	39	0	29	1	127	12	36	0	401
STUDY AREA PEAK HOUR VOLUMES											
TOTAL: VEHICLES	574		141		125		598		136		
% TRUCKS		7%		5%		12%		7%		0%	

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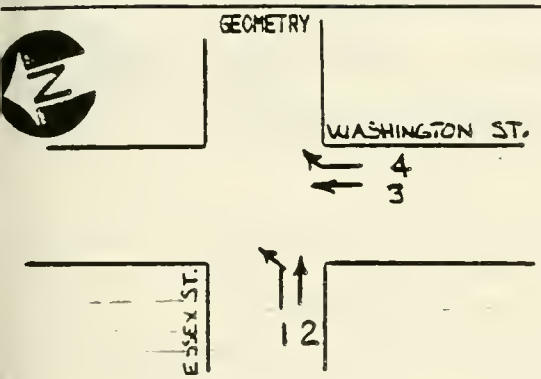

JOB NO: 2299 TOWN/CITY: BOSTON DATE: 11/3/87

DAY OF WEEK: TUESDAY WEATHER: CLEAR RECORDERS: RF

INTERSECTION: WASHINGTON ST. & ESSEX ST.

REMARKS:

PEAK HOUR AT THIS LOCATION: 8:00-9:00 AM

PEAK HOUR FOR THE STUDY AREA: 8:00-9:00 AM

VEHICLE COUNT

	1		2		3		4		5		6	
E PERIOD	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS
0-7:15 AM	15	3	113	4	36	2	54	6				
5-7:30 AM	14	0	112	6	35	2	53	8				
0-7:45 AM	8	1	118	6	43	2	57	7				
5-8:00 AM	21	6	137	3	51	2	75	8				
0-8:15 AM	19	2	143	9	59	3	54	8	97			
5-8:30 AM	29	0	137	7	66	4	84	11	338			
0-8:45 AM	34	4	155	12	63	5	70	7	350			
5-9:00 AM	34	1	130	12	87	5	68	12	349			
AREA PEAK VOLUMES												
: VEHICLES	123		605		292		314					
% TRUCKS		6%		7%		6%		12%				

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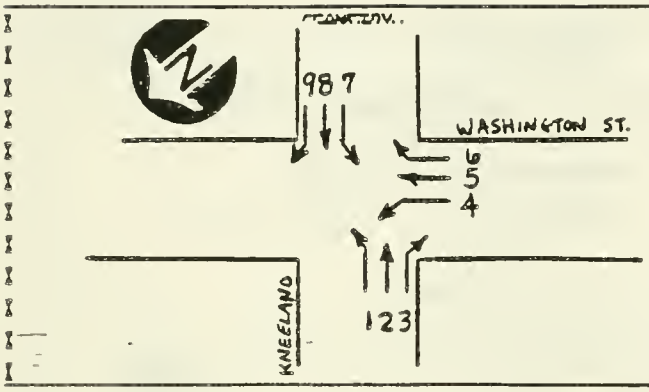

JOB NO: 2299 TOWN/CITY: BOSTON DATE: 11/5

DAY OF WEEK: THURSDAY WEATHER: CLOUDY RECORDERS: SG

INTERSECTION: KNEELAND ST. & WASHINGTON ST. #6

REMARKS:

PEAK HOUR AT THIS LOCATION: 7:45-8:45 AM

PEAK HOUR FOR THE STUDY AREA: 8:00-9:00 AM

VEHICLE COUNT

	1		2		3		4		5		6	
TIME PERIOD	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	T
7:00-7:15 AM	11	0	92	8	5	0	34	2	40	3	18	
7:15-7:30 AM	11	2	79	13	9	0	37	0	43	7	27	
7:30-7:45 AM	20	2	94	16	9	0	40	3	56	8	34	
7:45-8:00 AM	23	0	111	12	6	0	30	0	62	6	41	
8:00-8:15 AM	23	1	121	20	11	0	37	1	71	8	36	
8:15-8:30 AM	13	2	95	13	8	0	50	2	60	6	41	
8:30-8:45 AM	17	2	122	11	6	1	47	1	58	10	33	
8:45-9:00 AM	19	4	127	13	4	0	32	0	58	10	36	
STUDY AREA PEAK HOUR VOLUMES												
TOTAL: VEHICLES	81		522		30		170		281		156	
% TRUCKS		11%		11%		3%		2%		12%		

VEHICLE COUNT

	7		8		9		10		11		12	
TIME PERIOD	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	T
7:00-7:15 AM	17	1	119	14	15	1						
7:15-7:30 AM	18	0	91	18	9	2						
7:30-7:45 AM	25	1	90	11	12	2						
7:45-8:00 AM	28	0	137	16	14	1			138			
8:00-8:15 AM	20	0	130	14	15	1	~~494~~ 510		183			
8:15-8:30 AM	22	1	86	15.	13	1	432		111			
8:30-8:45 AM	24	1	105	15	16	1	471					
8:45-9:00 AM	29	0	103	15	15	2	469					
STUDY AREA PEAK HOUR VOLUMES												
TOTAL: VEHICLES	97		483		64							
%TRUCKS		2%		12%		8%						

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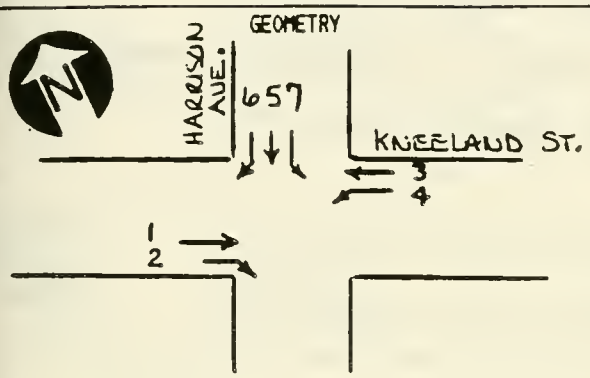

JOB NO: 2299 TOWN/CITY: BOSTON DATE: 11/03/87

DAY OF WEEK: TUESDAY WEATHER: CLOUDY RECORDERS: MT

INTERSECTION: HARRISON AVE. & KNEELAND ST.

REMARKS:

PEAK HOUR AT THIS LOCATION: 8:00-9:00 AM

PEAK HOUR FOR THE STUDY AREA: 8:00-9:00 AM

VEHICLE COUNT

	1		2		3		4		5		6	
TIME PERIOD	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS
7:00-7:15 AM	73	11	8	1	64	4	10	1	15	1	22	3
7:15-7:30 AM	70	12	13	3	79	9	13	1	10	1	17	3
7:30-7:45 AM	95	12	10	2	91	11	13	1	32	1	21	2
7:45-8:00 AM	106	13	17	1	114	9	16	1	26	1	35	1
8:00-8:15 AM	103	13	11	2	149	16	22	0	30	1	38	2
8:15-8:30 AM	139	13	15	1	130	18	20	1	27	2	29	1
8:30-8:45 AM	136	15	17	2	116	12	14	1	21	0	25	3
8:45-9:00 AM	131	16	14	3	120	10	15	2	25	1	30	3
STUDY AREA PEAK HOUR VOLUMES												
TOTAL: VEHICLES	566		65		571		75		107		131	
% TRUCKS		10%		12%		10%		5%		4%		7%

VEHICLE COUNT

	7		8		9		10		11		12	
TIME PERIOD	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS
7:00-7:15 AM	8	3										
7:15-7:30 AM	8	3										
7:30-7:45 AM	14	2										
7:45-8:00 AM	10	2										
8:00-8:15 AM	14	2	403									
8:15-8:30 AM	18	2	416									
8:30-8:45 AM	13	6	301									
8:45-9:00 AM	17	3	390	1590								
STUDY AREA PEAK HOUR VOLUMES												
TOTAL: VEHICLES	75											
%TRUCKS		17%										

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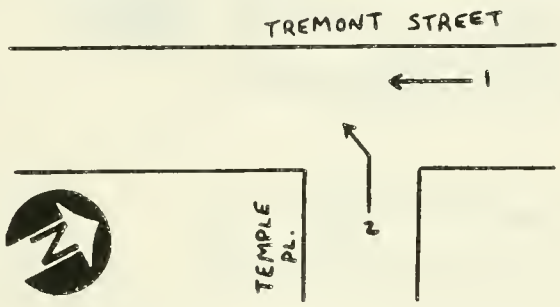
GEOMETRY



JOB NO: 2299 TOWN/CITY: BOSTON DATE: 10/29/

DAY OF WEEK: THURSDAY WEATHER: CLEAR RECORDERS: MS

INTERSECTION: TREMONT ST. & TEMPLE PL. #1

REMARKS:

PEAK HOUR AT THIS LOCATION: 5:00-6:00 PM

PEAK HOUR FOR THE STUDY AREA: ~~5:00-6:00~~ 4:45-5:45 PM

VEHICLE COUNT

TIME PERIOD	1 AUTOS	1 TRCKS	2 AUTOS	2 TRCKS	3 AUTOS	3 TRCKS	4 AUTOS	4 TRCKS	5 AUTOS	5 TRCKS	6 AUTOS	6 TRCKS
4:00-4:15 PM	282	11	43	1								
4:15-4:30 PM	258	17	49	1								
4:30-4:45 PM	288	10	44	0								
4:45-5:00 PM	271	20	50	0	341							
5:00-5:15 PM	257	11	50	1	319							
5:15-5:30 PM	308	12	73	2	395							
5:30-5:45 PM	306	14	60	0	380							
5:45-6:00 PM	298	16	44	1	359							
STUDY AREA PEAK HOUR VOLUMES	1199		236									
TOTAL: VEHICLES	~~1222~~		~~231~~									
% TRUCKS		4%		2%								

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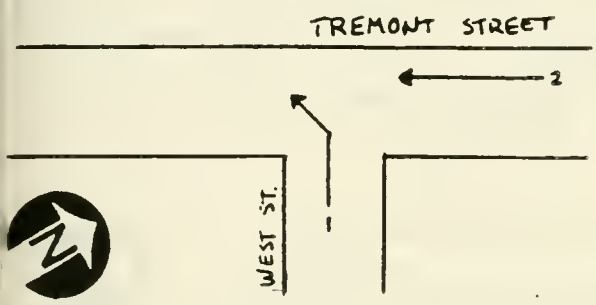
GEOMETRY



JOB NO: 2299 TOWN/CITY: BOSTON DATE: 10/29/87

DAY OF WEEK: THURSDAY WEATHER: CLEAR RECORDERS: RF

INTERSECTION: TREMONT ST. & WEST ST. #2

REMARKS:

PEAK HOUR AT THIS LOCATION: 5:00-6:00 PM
4:45-5:45
PEAK HOUR FOR THE STUDY AREA: 5:00-6:00 PM

VEHICLE COUNT

	1		2		3		4		5		6	
TIME PERIOD	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS
:00-4:15 PM	85	2	315	11								
:15-4:30 PM	65	2	311	14								
:30-4:45 PM	75	2	342	7								
:45-5:00 PM	58	0	316	19	393							
:00-5:15 PM	53	3	335	11	402							
:15-5:30 PM	26	0	345	9	380							
:30-5:45 PM	46	1	380	14	441							
:45-6:00 PM	89	2	341	18								
DY AREA PEAK												
OUR VOLUMES	187		1429									
TAL: VEHICLES	~~220~~		~~1453~~									
% TRUCKS		3%		4%								

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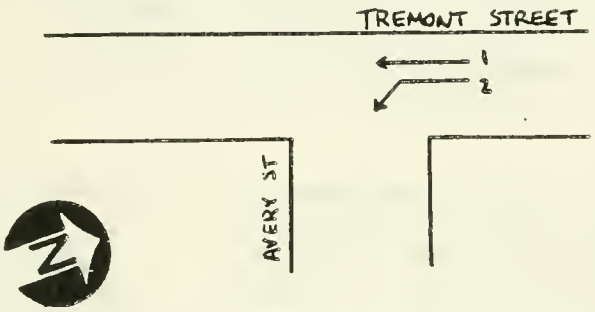
GEOMETRY



JOB NO: 2299 TOWN/CITY: BOSTON DATE: 10/29

DAY OF WEEK: THURSDAY WEATHER: CLEAR RECORDERS: LM

INTERSECTION: TREMONT ST. & AVERY ST. #3

REMARKS:

PEAK HOUR AT THIS LOCATION: 5:00-6:00 PM

PEAK HOUR FOR THE STUDY AREA: 5:00-6:00 PM 4:45-5:45

VEHICLE COUNT

	1		2		3		4		5		6	
TIME PERIOD	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TR
4:00-4:15 PM	300 ~~290~~	10 ~~5~~	30	0								
4:15-4:30 PM	325	16	35	1								
4:30-4:45 PM	343	4	20	1								
4:45-5:00 PM	326	17	47	0	390							
5:00-5:15 PM	334	14	41	0	389							
5:15-5:30 PM	350	18	37	0	405							
5:30-5:45 PM	376	17	39	0	432							
5:45-6:00 PM	352	16	25	0								
STUDY AREA PEAK HOUR VOLUMES	1452		164									
TOTAL: VEHICLES	~~1477~~		~~142~~									
% TRUCKS		4%		0%								

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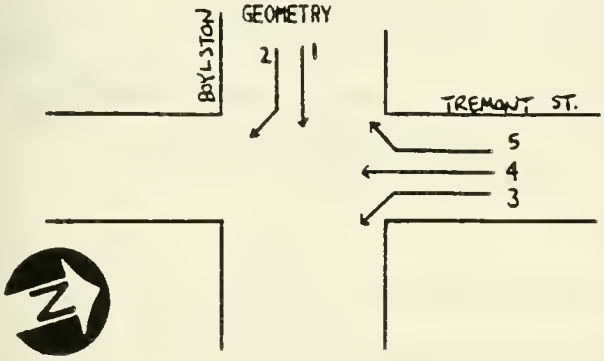

JOB NO: 2299 TOWN/CITY: BOSTON DATE: 10/29/87

DAY OF WEEK: THURSDAY WEATHER: CLEAR RECORDERS: JHF/ARM

INTERSECTION: TREMONT ST. & BOYLSTON ST. #4

REMARKS:

PEAK HOUR AT THIS LOCATION: 5:00-6:00 PM

PEAK HOUR FOR THE STUDY AREA: ~~5:00-6:00~~ 4:45-5:45 PM

VEHICLE COUNT

	1		2		3		4		5		6	
TIME PERIOD	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS
4:00-4:15 PM	87	3	19	4	29	1	229	7	79	3		
4:15-4:30 PM	110	4	36	0	28	1	207	6	62	0		
4:30-4:45 PM	110	1	29	0	37	0	226	5	68	2		
4:45-5:00 PM	135	3	36	0	32	0	228	11	77	1	523	
5:00-5:15 PM	120	4	43	3	32	0	229	9	88	1	529	
5:15-5:30 PM	137	1	52	0	38	1	267	4	85	1	586	
5:30-5:45 PM	110	5	51	2	35	0	238	2	75	1	519	
5:45-6:00 PM	122	2	44	1	33	0	247	8	74	1		
STUDY AREA PEAK HOUR VOLUMES	515		187		138		988		329			
TOTAL: VEHICLES	~~501~~		~~196~~		~~139~~		~~1004~~		~~326~~			
% TRUCKS		2%		3%		1%		2%		1%		

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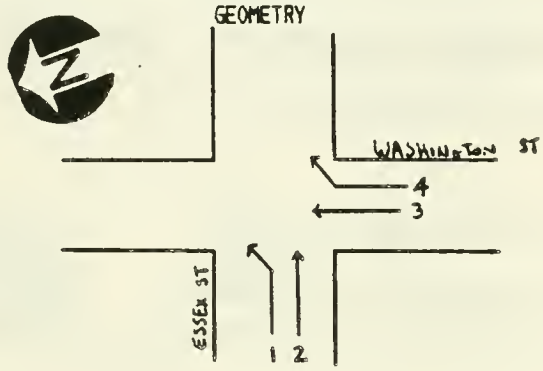

JOB NO: 2299 TOWN/CITY: BOSTON DATE: 11/3

DAY OF WEEK: TUESDAY WEATHER: CLOUDY RECORDERS: RF

INTERSECTION: WASHINGTON ST. & ESSEX ST. #5

REMARKS:

PEAK HOUR AT THIS LOCATION: 4:~~00~~-5:~~00~~ PM
4:45-5:45

PEAK HOUR FOR THE STUDY AREA: 5:00-6:00 PM

VEHICLE COUNT

	1		2		3		4		5		6	
TIME PERIOD	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	T
4:00-4:15 PM	28	1	124	7	77	1	77	6				
4:15-4:30 PM	23	0	138	6	54	2	108	6				
4:30-4:45 PM	26	0	125	2	45	1	65	5				
4:45-5:00 PM	30	0	146	5	74	0	97	7	359			
5:00-5:15 PM	25	0	132	1	66	0	77	6	307			
5:15-5:30 PM	24	0	131	2	56	0	81	9	303			
5:30-5:45 PM	28	0	144	5	49	0	74	6	306			
5:45-6:00 PM	23	0	121	2	61	0	99	6				
STUDY AREA PEAK HOUR VOLUMES	107		566		245		357					
TOTAL: VEHICLES	~~100~~		~~538~~		~~232~~		~~350~~					
% TRUCKS		0%		2%		0%		8%				

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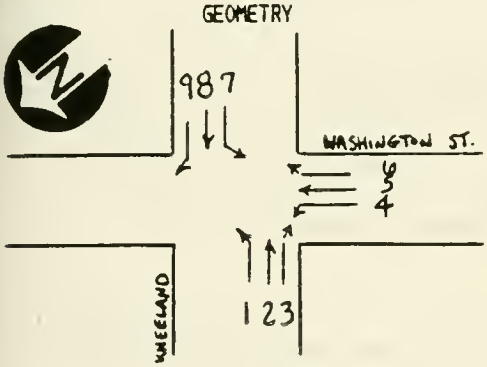
GEOMETRY



JOB NO: 2299 TOWN/CITY: BOSTON DATE: 11/5/87

DAY OF WEEK: THURSDAY WEATHER: CLOUDY RECORDERS: SG

INTERSECTION: KNEELAND ST. & WASHINGTON ST. #6

REMARKS:

PEAK HOUR AT THIS LOCATION: 5:00-6:00 PM
4:45-5:45
PEAK HOUR FOR THE STUDY AREA: 5:00-6:00 PM

VEHICLE COUNT

	1		2		3		4		5		6	
ME PERIOD	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS
00-4:15 PM	31	1	151	5	12	0	35	1	73	5	64	3
15-4:30 PM	21	0	140	12	28	0	29	0	53	6	31	3
30-4:45 PM	13	3	138	8	32	1	24	1	56	7	42	4
45-5:00 PM	22	0	168	3	23	0	22	0	64	4	57	3
00-5:15 PM	5	0	101	3	24	0	22	3	65	5	50	4
15-5:30 PM	13	0	186	6	13	0	24	0	77	5	49	3
30-5:45 PM	29	0	202	9	18	1	30	0	53	5	46	2
45-6:00 PM	20	0	157	7	19	0	27	1	60	4	50	1
Y AREA PEAK												
R VOLUMES	69		678		79		101		278		214	
L: VEHICLES	~~67~~		~~671~~		~~75~~		~~107~~		~~274~~		~~205~~	
% TRUCKS		0%		4%		1%		4%		7%		5%

VEHICLE COUNT

	7		8		9		10		11		12	
ME PERIOD	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS
00-4:15 PM	18	0	140	3	15	2						
15-4:30 PM	13	0	123	5	14	1						
30-4:45 PM	10	0	123	8	17	2						
45-5:00 PM	20	0	110	5	11	2	514					
00-5:15 PM	31	1	89	6	20	1	430					
15-5:30 PM	36	1	159	1	19	0	592					
30-5:45 PM	24	0	153	4	18	0	594					
45-6:00 PM	22	0	148	5	16	0						
Y AREA PEAK												
R VOLUMES	113		527		71							
L: VEHICLES	~~115~~		~~565~~		~~74~~		2130					
%TRUCKS		2%		3%		1%						

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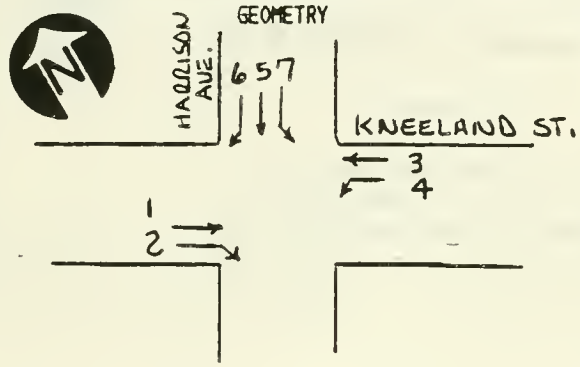

JOB NO: 2299 TOWN/CITY: BOSTON DATE: 11/3

DAY OF WEEK: TUESDAY WEATHER: CLOUDY RECORDERS: MT

INTERSECTION: HARRISON AVE. & KNEELAND ST. #7

REMARKS:

PEAK HOUR AT THIS LOCATION: 4:45-5:45 PM

4:45-5:45

PEAK HOUR FOR THE STUDY AREA: 5:00-6:00 PM

VEHICLE COUNT

	1		2		3		4		5		6	
TIME PERIOD	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	T
4:00-4:15 PM	239	14	22	0	110	4	20	1	40	0	32	
4:15-4:30 PM	213	13	32	0	108	5	21	1	39	0	26	
4:30-4:45 PM	220	13	26	0	93	6	13	2	57	0	2	
4:45-5:00 PM	207	6	17	0	109	5	25	0	47	1	44	
5:00-5:15 PM	230	14	28	0	131	4	13	0	47	0	34	
5:15-5:30 PM	219	12	26	0	140	3	13	0	63	0	35	
5:30-5:45 PM	185	9	15	1	137	2	12	0	54	0	39	
5:45-6:00 PM	185	8	12	0	123	0	17	0	45	1	41	
STUDY AREA PEAK HOUR VOLUMES	882		87		531		63		212		158	
TOTAL: VEHICLES	~~862~~		~~82~~		~~540~~		~~55~~		~~210~~		~~155~~	
% TRUCKS		5%		1%		2%		0%		0%		

VEHICLE COUNT

	7		8		9		10		11		12	
TIME PERIOD	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	TRCKS	AUTOS	
4:00-4:15 PM	43	1										
4:15-4:30 PM	53	0										
4:30-4:45 PM	39	2										
4:45-5:00 PM	37	0	499									
5:00-5:15 PM	44	1	516									
5:15-5:30 PM	40	3	~~517~~	555								
5:30-5:45 PM	43	1	501									
5:45-6:00 PM	40	1		1058								
STUDY AREA PEAK HOUR VOLUMES	169											
TOTAL: VEHICLES	~~173~~											
%TRUCKS		3%										

BOSTON METROPOLITAN AREA
ADJUSTMENT FACTORS

Hourly Factors

10 hr. count	1.69
11 " "	1.57
12 " "	1.42

Weekly Factors

Sunday	1.106
Monday	.970
Tuesday	1.019
Wednesday	1.018
Thursday	.983
Friday	.935
Saturday	1.060

Monthly Factors

January	1.172
February	1.127
March	1.049
April	.960
May	.925
June	.918
July	.920
August	.911
September	1.029
October	1.077
November	1.148
December	1.053

Existing LOS Analysis

TREMONT ST/TEMPLE PL
EXISTING CONDITIONS: AM PEAK HOUR
Date: 03-07-1989 Time: 11:55:23

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=1AM GEOMETRICS=1AM SIGNAL=1AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

DIR	STREET	VOLUMES LT	TH	RT	TOTAL	# OF LANES LT	TH	RT	LANE WIDTH LT	TH	RT	CROSS WALK
EB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
WB	TEMPLE PL	201	0	0	201	1	0	0	9.0	0.0	0.0	24
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	TREMONT ST	0	882	0	882	0	3	0	0.0	10.0	0.0	40

TOTAL VOLUME = 1083

TRAFFIC & ROADWAY CONDITIONS

DIR	GRADE	%HV	ADJ PARK Y/N	MOVES	BUSES	PHF	PEDESTRIANS CROSS	BUT	MIN TIME	ARR TYPE
EB	0.0%	0.0%	N	0	0	.000	0		9.0	0
WB	1.0%	2.0%	Y	10	0	.960	200	Y	9.0	3
NB	0.0%	0.0%	N	0	0	.000	0		13.0	0
SB	-1.0%	2.0%	N	0	20	.960	300	Y	13.0	3

PHASINGS

	EASTBOUND l	t	r	p	WESTBOUND l	t	r	p	NORTHBOUND l	t	r	p	SOUTHBOUND l	t	r	p	GREEN	Y+R	PRE/ACT
1					*											*	26.0	4	A
2								*							*		44.0	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	201	0	0	.960	209	0	0
NB	0	0	0	.000	0	0	0
SB	0	882	0	.960	0	919	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
WB	LT	209	1	1.00	209	1.00	0.00
SB	TH	919	3	1.10	1011	0.00	0.00

TREMONT ST/TEMPLE PL
EXISTING CONDITIONS: AM PEAK HOUR
date: 03-07-1999 time: 11:55:25

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	LT	1800	1	0.900	0.990	0.995	0.849	1.000	0.900	1.000	0.950	1158
SB	TH	1800	3	0.933	0.990	1.005	1.000	0.972	0.900	1.000	1.000	4388

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	LT	209	1158	0.18	0.35	405	0.52	*
SB	TH	1011	4388	0.23	0.55	2413	0.42	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.41 TOTAL V/C= 0.46

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	LT	0.52	*	0.35	80.0	15.68	405	0.23	1.00	15.91	C	3.0	10
SB	TH	0.42	*	0.55	80.0	8.00	2413	0.00	0.85	6.80	B	9.2	28

DIR	STREET	DELAY	LOS
WB	TEMPLE PL	15.91	C
SB	TREMONT ST	6.80	B

INTERSECTION DELAY = 8.36 INTERSECTION LOS=B

for chosen cycle length 80.0
suggested timing phase 1 is 31.7 secs green, 4.0 secs yellow + red clear
suggested timing phase 2 is 40.3 secs green, 4.0 secs yellow + red clear

TREMONT ST/TEMPLE PL
EXISTING CONDITIONS: PM PEAK HOUR
Date: 03-07-1989 Time: 11:56:33

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=1PM GEOMETRICS=1PM SIGNAL=1PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

DIR	STREET	VOLUMES LT	TH	RT	TOTAL	# OF LANES LT	TH	RT	LANE WIDTH LT	TH	RT	CROSS WALK
EB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
WB	TEMPLE PL	293	0	0	293	1	0	0	9.0	0.0	0.0	24
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	TREMONT ST	0	1187	0	1187	0	3	0	0.0	10.0	0.0	40

TOTAL VOLUME = 1480

TRAFFIC & ROADWAY CONDITIONS

DIR	GRADE	%HV	ADJ PARK Y/N	MOVES	BUSES	PHF	PEDESTRIANS CROSS	BUT	MIN TIME	ARR TYPE
EB	0.0%	0.0%	N	0	0	.000	0		9.0	0
WB	1.0%	2.0%	Y	10	0	.910	200	Y	9.0	3
NB	0.0%	0.0%	N	0	0	.000	0		13.0	0
SB	-1.0%	2.0%	N	0	20	.910	300	Y	13.0	3

PHASINGS

	EASTBOUND l	t	r	p	WESTBOUND l	t	r	p	NORTHBOUND l	t	r	p	SOUTHBOUND l	t	r	p	GREEN	Y+R	PRE/ACT
1					*											*	28.0	4	A
2							*							*			44.0	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	293	0	0	.910	322	0	0
NB	0	0	0	.000	0	0	0
SB	0	1187	0	.910	0	1304	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
WB	LT	322	1	1.00	322	1.00	0.00
SB	TH	1304	3	1.10	1435	0.00	0.00

TREMONT ST/TEMPLE PL
EXISTING CONDITIONS: PM PEAK HOUR
date: 03-07-1989 time: 11:56:34

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	LT	1800	1	0.900	0.990	0.995	0.849	1.000	0.900	1.000	0.950	1158
SB	TH	1800	3	0.933	0.990	1.005	1.000	0.972	0.900	1.000	1.000	4388

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	LT	322	1158	0.28	0.35	405	0.79	*
SB	TH	1435	4388	0.33	0.55	2413	0.59	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.60 TOTAL V/C= 0.67

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	LT	0.79	*	0.35	80.0	17.79	405	8.69	1.00	26.48	D	5.4	17
SB	TH	0.59	*	0.55	80.0	9.15	2413	0.27	0.85	8.00	B	13.0	40

DIR	STREET	DELAY	LOS
WB	TEMPLE PL	26.48	D
SB	TREMONT ST	8.00	B

INTERSECTION DELAY = 11.39 INTERSECTION LOS=B

for chosen cycle length 80.0
suggested timing phase 1 is 33.1 secs green, 4.0 secs yellow + red clear
suggested timing phase 2 is 38.9 secs green, 4.0 secs yellow + red clear

TREMONT ST/WEST ST
EXISTING CONDITIONS: PM PEAK HOUR
Date: 03-07-1989 Time: 12:01:26

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=2PM GEOMETRICS=2PM SIGNAL=2PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

DIR	STREET	VOLUMES LT	TH	RT	TOTAL	# OF LANES LT	TH	RT	LANE WIDTH LT	TH	RT	CROSS WALK
EB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
WB	WEST ST	263	0	0	263	1	0	0	12.0	0.0	0.0	24
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	TREMONT ST	0	1480	0	1480	0	3	0	0.0	10.0	0.0	40

TOTAL VOLUME = 1743

TRAFFIC & ROADWAY CONDITIONS

DIR	GRADE	%HV	ADJ PARK Y/N	MOVES	BUSES	PHF	PEDESTRIANS CROSS	BUT	MIN TIME	ARR TYPE
EB	0.0%	0.0%	N	0	0	.000	0		9.0	0
WB	1.0%	2.0%	Y	10	0	.920	200	Y	9.0	3
NB	0.0%	0.0%	N	0	0	.000	0		13.0	0
SB	-1.0%	2.0%	N	0	20	.920	300	Y	13.0	3

PHASINGS

	EASTBOUND l	t	r	p	WESTBOUND l	t	r	p	NORTHBOUND l	t	r	p	SOUTHBOUND l	t	r	p	GREEN	Y+R	PRE/ACT
1					*											*	30.0	4	A
2								*						*			52.0	4	A

CYCLE= 90.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	263	0	0	.920	286	0	0
NB	0	0	0	.000	0	0	0
SB	0	1480	0	.920	0	1609	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
WB	LT	286	1	1.00	286	1.00	0.00
SB	TH	1609	3	1.10	1770	0.00	0.00

TREMONT ST/WEST ST
EXISTING CONDITIONS: PM PEAK HOUR
date: 03-07-1989 time: 12:01:28

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	LT	1800	1	1.000	0.990	0.995	0.849	1.000	0.900	1.000	0.950	1287
SB	TH	1800	3	0.933	0.990	1.005	1.000	0.972	0.900	1.000	1.000	4388

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	LT	286	1287	0.22	0.33	429	0.67	*
SB	TH	1770	4388	0.40	0.58	2535	0.70	*

CYCLE= 90.0 LOST= 9.0 SUM V/S CRIT= 0.63 TOTAL V/C= 0.69

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	LT	0.67	*	0.33	90.0	19.54	429	3.13	1.00	22.67	C	4.8	15
SB	TH	0.70	*	0.58	90.0	10.22	2535	0.71	0.85	9.29	B	17.0	52

DIR	STREET	DELAY	LOS
WB	WEST ST	22.67	C
SB	TREMONT ST	9.29	B

INTERSECTION DELAY = 11.15 INTERSECTION LOS=B

for chosen cycle length 90.0
suggested timing phase 1 is 29.1 secs green, 4.0 secs yellow + red clear
suggested timing phase 2 is 52.9 secs green, 4.0 secs yellow + red clear

TREMONT ST/WEST ST
EXISTING CONDITIONS: AM PEAK HOUR
Date: 03-07-1989 Time: 11:59:46

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=2AM GEOMETRICS=2AM SIGNAL=2AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
WB	WEST ST	228	0	0	228	1	0	0	12.0	0.0	0.0	24
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	TREMONT ST	0	1083	0	1083	0	3	0	0.0	10.0	0.0	40

TOTAL VOLUME = 1311

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK			PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	0.0%	N	0	0	.000	0		9.0	0
WB	1.0%	2.0%	Y	10	0	.960	200	Y	9.0	3
NB	0.0%	0.0%	N	0	0	.000	0		13.0	0
SB	-1.0%	2.0%	N	0	20	.960	300	Y	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1					*											*	30.0	4	A
2								*							*		52.0	4	A

CYCLE= 90.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	228	0	0	.960	238	0	0
NB	0	0	0	.000	0	0	0
SB	0	1083	0	.960	0	1128	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
WB	LT	238	1	1.00	238	1.00	0.00
SB	TH	1128	3	1.10	1241	0.00	0.00

TREMONT ST/WEST ST
EXISTING CONDITIONS: AM PEAK HOUR
date: 03-07-1989 time: 11:59:48

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	LT	1800	1	1.000	0.990	0.995	0.849	1.000	0.900	1.000	0.950	1287
SB	TH	1800	3	0.933	0.990	1.005	1.000	0.972	0.900	1.000	1.000	4388

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	LT	238	1287	0.18	0.33	429	0.55	*
SB	TH	1241	4388	0.28	0.58	2535	0.49	*

CYCLE= 90.0 LOST= 8.0 SUM V/S CRIT= 0.47 TOTAL V/C= 0.51

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	LT	0.55	*	0.33	90.0	18.64	429	0.77	1.00	19.41	C	4.0	13
SB	TH	0.49	*	0.58	90.0	8.50	2535	0.00	0.85	7.23	B	11.9	37

DIR	STREET	DELAY	LOS
WB	WEST ST	19.41	C
SB	TREMONT ST	7.23	B

INTERSECTION DELAY = 9.18 INTERSECTION LOS=B

for chosen cycle length 90.0
suggested timing phase 1 is 32.4 secs green, 4.0 secs yellow + red clear
suggested timing phase 2 is 49.6 secs green, 4.0 secs yellow + red clear

TREMONT ST/AVERY ST
EXISTING CONDITIONS: AM PEAK HOUR
Date: 03-07-1989 Time: 11:39:16

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=3AM GEOMETRICS=3AM SIGNAL=3AM

LOCATED IN CSD:Y

VOLUME & GEOMETRICS

DIR	STREET	VOLUMES LT	TH	RT	TOTAL	# OF LANES LT	TH	RT	LANE WIDTH LT	TH	RT	CROSS WALK
EB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
WB	AVERY ST	0	0	0	0	0	0	0	0.0	0.0	0.0	24
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	TREMONT ST	123	1188	0	1311	1	3	0	10.0	10.0	0.0	40

TOTAL VOLUME = 1311

TRAFFIC & ROADWAY CONDITIONS

DIR	GRADE	%HV	ADJ PARK Y/N	MOVES	BUSES	PHF	PEDESTRIANS CROSS	BUT	MIN TIME	ARR TYPE
EB	0.0%	0.0%	N	0	0	.000	0		9.0	0
WB	1.0%	2.0%	Y	10	0	.000	400	Y	9.0	3
NB	0.0%	0.0%	N	0	0	.000	0		13.0	0
SB	-1.0%	2.0%	N	0	20	.960	700	Y	13.0	3

PHASINGS

	EASTBOUND l	t	r	p	WESTBOUND l	t	r	p	NORTHBOUND l	t	r	p	SOUTHBOUND l	t	r	p	GREEN	Y+R	PRE/ACT
1													*	*			56.0	4	A
2									*							*	16.0	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	0	0	0	.000	0	0	0
NB	0	0	0	.000	0	0	0
SB	123	1188	0	.960	128	1238	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
SB	LT	128	1	1.00	128	1.00	0.00
SB	TH	1238	3	1.10	1361	0.00	0.00

TREMONT ST/AVERY ST
EXISTING CONDITIONS: AM PEAK HOUR
date: 03-07-1989 time: 11:38:18

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
SB	LT	1800	1	0.933	0.990	1.005	1.000	1.000	0.900	1.000	0.950	1429
SB	TH	1800	3	0.933	0.990	1.005	1.000	0.972	0.900	1.000	1.000	4388

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
SB	LT	128	1429	0.09	0.70	1001	0.13	
SB	TH	1361	4388	0.31	0.70	3072	0.44	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.31 TOTAL V/C= 0.34

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
SB	LT	0.13		0.70	80.0	3.01	1001	0.00	1.00	3.01	A	0.9	3
SB	TH	0.44	*	0.70	80.0	3.97	3072	0.00	0.85	3.37	A	8.3	26

DIR	STREET	DELAY	LOS
SB	TREMONT ST	3.34	A

INTERSECTION DELAY = 3.34 INTERSECTION LOS=A

for chosen cycle length 80.0
suggested timing phase 1 is 72.0 secs green, 4.0 secs yellow + red clear
suggested timing phase 2 is 0.0 secs green, 4.0 secs yellow + red clear

TREMONT ST/AVERY ST
EXISTING CONDITIONS:PM PEAK
Date: 03-07-1989 Time: 11:39:32

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=3PM GEOMETRICS=3PM SIGNAL=3PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
WB	AVERY ST	0	0	0	0	0	0	0	0.0	0.0	0.0	24
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	TREMONT ST	139	1604	0	1743	1	3	0	10.0	10.0	0.0	40

TOTAL VOLUME = 1743

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK			PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	0.0%	N	0	0	.000	0		9.0	0
WB	1.0%	2.0%	Y	10	0	.000	400	Y	9.0	3
NB	0.0%	0.0%	N	0	0	.000	0		13.0	0
SB	-1.0%	2.0%	N	0	20	.940	700	Y	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1													*	*			56.0	4	A
2									*				*			*	16.0	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	0	0	0	.000	0	0	0
NB	0	0	0	.000	0	0	0
SB	139	1604	0	.940	148	1706	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
SB	LT	148	1	1.00	148	1.00	0.00
SB	TH	1706	3	1.10	1877	0.00	0.00

TREMONT ST/AVERY ST
EXISTING CONDITIONS:PM PEAK
date: 03-07-1989 time: 11:39:34

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
SB	LT	1800	1	0.933	0.990	1.005	1.000	1.000	0.900	1.000	0.950	1429
SB	TH	1900	3	0.933	0.990	1.005	1.000	0.972	0.900	1.000	1.000	4388

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
SB	LT	148	1429	0.10	0.70	1001	0.15	
SB	TH	1877	4388	0.43	0.70	3072	0.61	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.43 TOTAL V/C= 0.48

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
SB	LT	0.15		0.70	80.0	3.05	1001	0.00	1.00	3.05	A	1.0	4
SB	TH	0.61	*	0.70	80.0	4.78	3072	0.26	0.85	4.28	A	11.4	35

DIR	STREET	DELAY	LOS
SB	TREMONT ST	4.19	A

INTERSECTION DELAY = 4.19 INTERSECTION LOS=A

for chosen cycle length 80.0
suggested timing phase 1 is 72.0 secs green, 4.0 secs yellow + red clear
suggested timing phase 2 is 0.0 secs green, 4.0 secs yellow + red clear

BOYLSTON ST/TREMONT ST
EXISTING CONDITIONS: AM PEAK
Date: 03-07-1989 Time: 10:45:19

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=4AM GEOMETRICS=4AM SIGNAL=4AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

DIR	STREET	VOLUMES LT	TH	RT	TOTAL	# OF LANES LT	TH	RT	LANE WIDTH LT	TH	RT	CROSS WALK
EB	BOYLSTON ST	0	570	150	720	0	2	0	0.0	12.0	0.0	46
WB	BOYLSTON ST	0	0	0	0	0	0	0	0.0	0.0	0.0	24
NB	TREMONT ST	0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	TREMONT ST	177	823	188	1188	0	4	0	0.0	10.0	0.0	40

TOTAL VOLUME = 1908

TRAFFIC & ROADWAY CONDITIONS

DIR	GRADE	%HV	ADJ PARK Y/N	MOVES	BUSES	PHF	PEDESTRIANS CROSS	BUT	MIN	ARR TIME	TYPE
EB	0.0%	2.0%	N	0	10	.930	600	Y	14.5		3
WB	0.0%	0.0%	N	10	0	.000	400	Y	14.5		3
NB	0.0%	0.0%	N	0	0	.000	500	Y	9.0		0
SB	-1.0%	2.0%	N	0	20	.930	700	Y	9.0		3

PHASINGS

	EASTBOUND l	t	r	p	WESTBOUND l	t	r	p	NORTHBOUND l	t	r	p	SOUTHBOUND l	t	r	p	GREEN	Y+R	PRE/ADT
1		*	*													*	24.0	4	A
2				*				*				*				*	16.0	4	A
3													*	*	*		28.0	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	TPV	RTV	PHF	LTFR	THFR	RTFR
EB	0	570	150	.930	0	613	161
WB	0	0	0	.000	0	0	0
NB	0	0	0	.000	0	0	0
SB	177	823	188	.930	190	885	202

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	TH-RT	774	2	1.05	813	0.00	0.21
SB	LT-TH-RT	1277	4	1.10	1405	0.15	0.16

BOYLSTON ST/TREMONT ST
EXISTING CONDITIONS: AM PEAK
date: 03-07-1989 time: 10:45:21

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH-RT	1800	2	1.000	0.990	1.000	1.000	0.979	0.900	0.969	1.000	3043
SB	LT-TH-RT	1600	4	0.933	0.990	1.005	1.000	0.979	0.900	0.976	1.000	5114

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH-RT	813	3043	0.27	0.30	913	0.89	*
SB	LT-TH-RT	1405	5114	0.27	0.35	1790	0.79	*

CYCLE= 80.0 LOST=12.0 SUM V/S CRIT= 0.54 TOTAL V/C= 0.64

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH-RT	0.89	*	0.30	80.0	20.33	913	8.76	0.85	24.74	C	12.9	40
SB	LT-TH-RT	0.79	*	0.35	80.0	17.71	1790	2.00	0.85	16.75	C	18.5	56

DIR	STREET	DELAY	LOS
EB	BOYLSTON ST	24.74	C
SB	TREMONT ST	16.75	C

INTERSECTION DELAY = 19.66 INTERSECTION LOS=C

improves by 1.5 seconds when 1 LT, 2TH lanes used

for chosen cycle length 80.0
suggested timing phase 1 is 33.5 secs green, 4.0 secs yellow + red clear
suggested timing phase 2 is 0.0 secs green, 4.0 secs yellow + red clear
suggested timing phase 3 is 34.5 secs green, 4.0 secs yellow + red clear

BOYLSTON ST/TREMONT ST
EXISTING CONDITIONS:PM PEAK
Date: 03-07-1989 Time: 10:50:35

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=4PM GEOMETRICS=4PM SIGNAL=4PM

- EB makes the difference
try with SB lanes changed

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

DIR	STREET	VOLUMES LT	TH	RT	TOTAL	# OF LANES LT	TH	RT	LANE WIDTH LT	TH	RT	CROSS WALK
EB	BOYLSTON ST	0	695	317	1012	0	1	0	0.0	12.0	0.0	46
WB	BOYLSTON ST	0	0	0	0	0	0	0	0.0	0.0	0.0	24
NB	TREMONT ST	0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	TREMONT ST	159	1089	356	1604	0	4	0	0.0	10.0	0.0	40
						3	1					

worse with 3 TH 1 RT 297

TOTAL VOLUME = 2616

12 1 — worse with this also 326.

TRAFFIC & ROADWAY CONDITIONS

DIR	GRADE	%HV	ADJ PARK Y/N	MOVES	BUSES	PHF	PEDESTRIANS CROSS	BUT	MIN	TIME	ARR TYPE
EB	0.0%	2.0%	N	0	10	.920	600	Y	14.5		3
WB	0.0%	0.0%	N	10	0	.000	400	Y	14.5		3
NB	0.0%	0.0%	N	0	0	.000	500	Y	9.0		0
SB	-1.0%	2.0%	N	0	20	.920	700	Y	9.0		3

PHASINGS

	EASTBOUND l	t	r	p	WESTBOUND l	t	r	p	NORTHBOUND l	t	r	p	SOUTHBOUND l	t	r	p	GREEN	Y+R	PRE/ACT
1		*	*													*	24.0	4	A
2				*				*				*				*	16.0	4	A
3													*	*	*		28.0	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	695	317	.920	0	755	345
WB	0	0	0	.000	0	0	0
NB	0	0	0	.000	0	0	0
SB	159	1067	356	.920	173	1184	387

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
EB	TH-RT	1100	1	1.00	1100	0.00	0.31
SB	LT-TH-RT	1743	4	1.10	1918	0.10	0.22

BOYLSTON ST/TREMONT ST
EXISTING CONDITIONS:PM PEAK
date: 03-07-1989 time: 10:50:37

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH-RT	2100	1	1.000	0.990	1.000	1.000	0.958	0.900	0.783	1.000	1404
SB	LT-TH-RT	1600	4	0.933	0.990	1.005	1.000	0.979	0.900	0.967	1.000	5064

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH-RT	1100	1404	0.78	0.30	421	2.61	*
SB	LT-TH-RT	1918	5064	0.38	0.35	1772	1.08	*

CYCLE= 80.0 LOST=12.0 SUM V/S CRIT= 1.16 TOTAL V/C= 1.37

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH-RT	2.61	*	0.30	80.0	68.72	421	565.83	0.85	539.37	F	222.8	668
SB	LT-TH-RT	1.08	*	0.35	80.0	20.67	1772	36.94	0.85	48.97	E	43.4	131

DIR	STREET	DELAY	LOS
EB	BOYLSTON ST	539.37	F
SB	TREMONT ST	48.97	E

INTERSECTION DELAY =227.72 INTERSECTION LOS=F

for chosen cycle length 80.0
suggested timing phase 1 is 45.8 secs green, 4.0 secs yellow + red clear
suggested timing phase 2 is 0.0 secs green, 4.0 secs yellow + red clear
suggested timing phase 3 is 22.2 secs green, 4.0 secs yellow + red clear

STUART ST/KNEELAND ST/WASHINGTON ST
EXISTING CONDITIONS: PM PEAK
Date: 03-07-1989 Time: 11:01:06

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=5PM GEOMETRICS=5PM SIGNAL=5PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

DIR	STREET	VOLUMES LT	TH	RT	TOTAL	# OF LANES LT	TH	RT	LANE WIDTH LT	TH	RT	CROSS WALK
EB	STUART ST	157	577	64	798	1	2	0	11.0	11.0	0.0	48
WB	KNEELAND ST	90	693	89	872	0	2	1	0.0	11.0	11.0	48
NB	WASHINGTON ST	98	158	210	466	0	2	0	0.0	12.0	0.0	36
SB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	40

TOTAL VOLUME = 2136

TRAFFIC & ROADWAY CONDITIONS

DIR	GRADE	%HV	ADJ PARK Y/N	MOVES	BUSES	PHF	PEDESTRIANS CROSS	BUT	MIN TIME	ARR TYPE
EB	0.0%	2.0%	Y	15	10	.900	200	Y	15.0	3
WB	0.0%	2.0%	Y	15	10	.900	200	Y	15.0	3
NB	0.0%	2.0%	Y	15	15	.900	200	Y	13.0	3
SB	0.0%	0.0%	N	0	0	.000	200	Y	13.0	3

PHASINGS

	EASTBOUND l	t	r	p	WESTBOUND l	t	r	p	NORTHBOUND l	t	r	p	SOUTHBOUND l	t	r	p	GREEN	Y+R	PRE/ACT
1					*	*	*										6.0	0	A
2	*	*	*		*	*	*					*				*	33.0	4	A
3				*					*	*	*	*					33.0	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	157	577	64	.900	174	641	71
WB	90	693	89	.900	100	770	99
NB	98	158	210	.900	109	176	233
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT	174	1	1.00	174	1.00	0.00
EB	TH-RT	712	2	1.05	748	0.00	0.10
WB	LT-TH	870	2	1.05	913	0.11	0.00
WB	RT	99	1	1.00	99	0.00	1.00
NB	LT-TH-RT	518	2	1.05	544	0.21	0.45

STUART ST/KNEELAND ST/WASHINGTON ST
EXISTING CONDITIONS: PM PEAK
date: 03-07-1989 time: 11:01:08

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwio	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.322	500
EB	TH-RT	1800	2	0.967	0.990	1.000	0.912	0.979	0.900	0.976	1.000	2701
WB	LT-TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.917	2842
WB	RT	1800	1	0.967	0.990	1.000	0.824	0.958	0.900	0.769	1.000	941
NB	LT-TH-RT	1800	2	1.000	0.990	1.000	0.912	0.969	0.900	0.889	0.948	2390

SUPPLEMENTAL WORKSHEET FOR
LEFT-TURN ADJUSTMENT FACTOR FLT
INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	No	Vo	Plto	LGo
EB	80	33	1	174	712	174	1.00	2	870	0.11	6

CALCULATIONS

DIR	Sop	Yo	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
EB	3036	0.287	22.530	0.331	1.000	10.470	0.000	0.000	3.396	0.322	0.322

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	174	500	0.35	0.41	206	0.85	*
EB	TH-RT	748	2701	0.28	0.41	1114	0.67	
WB	LT-TH	913	2842	0.32	0.49	1386	0.66	
WB	RT	99	941	0.11	0.49	459	0.22	
NB	LT-TH-RT	544	2390	0.23	0.41	986	0.55	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.58 TOTAL V/C= 0.64

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	0.85	*	0.41	80.0	16.12	206	21.55	0.85	32.02	D	3.2	10
EB	TH-RT	0.67		0.41	80.0	14.51	1114	1.28	0.85	13.42	B	9.3	29
WB	LT-TH	0.66		0.49	80.0	11.77	1386	0.93	0.85	10.79	B	9.9	31
WB	RT	0.22		0.49	80.0	8.92	459	0.00	0.85	7.58	B	1.1	4
NB	LT-TH-RT	0.55	*	0.41	80.0	13.56	986	0.32	0.85	11.82	B	6.8	21

DIR	STREET	DELAY	LOS
EB	STUART ST	16.94	C
WB	KNEELAND ST	10.48	B
NB	WASHINGTON ST	11.82	B

INTERSECTION DELAY = 13.18 INTERSECTION LOS=B

for chosen cycle length 80.0
suggested timing phase 1 is 0.0 secs green, 0.0 secs yellow + red clear
suggested timing phase 2 is 43.6 secs green, 4.0 secs yellow + red clear
suggested timing phase 3 is 28.4 secs green, 4.0 secs yellow + red clear

STUART ST/KNEELAND ST/WASHINGTON ST
EXISTING CONDITIONS: AM PEAK
Date: 03-07-1989 Time: 10:56:53

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=5AM GEOMETRICS=5AM SIGNAL=5AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

DIR	STREET	VOLUMES LT	TH	RT	TOTAL	# OF LANES LT	TH	RT	LANE WIDTH LT	TH	RT	CROSS WALK
EB	STUART ST	122	654	35	811	1	2	0	11.0	11.0	0.0	48
WB	KNEELAND ST	119	569	144	832	0	2	1	0.0	11.0	11.0	48
NB	WASHINGTON ST	205	319	103	627	0	2	0	0.0	12.0	0.0	36
SB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	40

TOTAL VOLUME = 2270

TRAFFIC & ROADWAY CONDITIONS

DIR	GRADE	%HV	ADJ PARK Y/N	MOVES	BUSES	PHF	PEDESTRIANS CROSS	BUT	MIN TIME	ARR TYPE
EB	0.0%	2.0%	Y	15	10	.920	200	Y	15.0	3
WB	0.0%	2.0%	Y	15	10	.920	200	Y	15.0	3
NB	0.0%	2.0%	Y	15	15	.920	200	Y	13.0	3
SB	0.0%	0.0%	N	0	0	.000	200	Y	13.0	3

PHASINGS

	EASTBOUND l	t	r	p	WESTBOUND l	t	r	p	NORTHBOUND l	t	r	p	SOUTHBOUND l	t	r	p	GREEN	Y+R	PRE/ACT
1					*	*	*										6.0	0	A
2	*	*	*		*	*	*					*				*	33.0	4	A
3				*					*	*	*	*					33.0	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	122	654	35	.920	133	711	38
WB	119	569	144	.920	129	618	157
NB	205	319	103	.920	223	347	112
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT	133	1	1.00	133	1.00	0.00
EB	TH-RT	749	2	1.05	786	0.00	0.05
WB	LT-TH	748	2	1.05	785	0.17	0.00
WB	RT	157	1	1.00	157	0.00	1.00
NB	LT-TH-RT	682	2	1.05	716	0.33	0.16

STUART ST/KNEELAND ST/WASHINGTON ST
EXISTING CONDITIONS: AM PEAK
date: 03-07-1989 time: 10:56:55

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.382	592
EB	TH-RT	1800	2	0.967	0.990	1.000	0.912	0.979	0.900	0.988	1.000	2734
WB	LT-TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.870	2699
WB	RT	1800	1	0.967	0.990	1.000	0.824	0.958	0.900	0.769	1.000	941
NB	LT-TH-RT	1800	2	1.000	0.990	1.000	0.912	0.969	0.900	0.960	0.920	2501

SUPPLEMENTAL WORKSHEET FOR
LEFT-TURN ADJUSTMENT FACTOR FLT
INPUT VARIABLES

DIR	C	B	N	Va	Vm	Vlt	Plt	No	Vo	Plto	LGo
EB	80	33	1	133	749	133	1.00	2	748	0.17	6

CALCULATIONS

DIR	Sso	Yo	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
EB	2758	0.271	23.748	0.408	1.000	9.252	0.000	0.000	2.760	0.382	0.382

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	133	592	0.22	0.41	244	0.54	
EB	TH-RT	786	2734	0.29	0.41	1128	0.70	
WB	LT-TH	785	2699	0.29	0.49	1316	0.60	*
WB	RT	157	941	0.17	0.49	459	0.34	
NB	LT-TH-RT	716	2501	0.29	0.41	1032	0.69	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.58 TOTAL V/C= 0.64

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	0.54		0.41	80.0	13.52	244	1.05	0.85	12.39	B	1.7	6
EB	TH-RT	0.70		0.41	80.0	14.73	1128	1.58	0.85	13.86	B	9.8	30
WB	LT-TH	0.60	*	0.49	80.0	11.26	1316	0.50	0.85	10.00	B	8.5	26
WB	RT	0.34		0.49	80.0	9.58	459	0.00	0.85	8.14	B	1.8	6
NB	LT-TH-RT	0.69	*	0.41	80.0	14.70	1032	1.67	0.85	13.91	B	8.9	28

DIR	STREET	DELAY	LOS
EB	STUART ST	13.65	B
WB	KNEELAND ST	9.69	B
NB	WASHINGTON ST	13.91	B

INTERSECTION DELAY = 12.27 INTERSECTION LOS=B

for chosen cycle length 80.0
suggested timing phase 1 is 0.3 secs green, 0.0 secs yellow + red clear
suggested timing phase 2 is 36.0 secs green, 4.0 secs yellow + red clear
suggested timing phase 3 is 35.7 secs green, 4.0 secs yellow + red clear

LAGRANGE ST/BEACH ST/WASHINGTON ST
EXISTING CONDITIONS: AM PEAK
Date: 03-07-1989 Time: 11:06:33

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=6AM GEOMETRICS=6AM SIGNAL=6AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

DIR	STREET	VOLUMES LT	TH	RT	TOTAL	# OF LANES LT	TH	RT	LANE WIDTH LT	TH	RT	CROSS WALK
EB	LAGRANGE ST	28	0	0	28	1	0	0	12.0	0.0	0.0	22
WB	BEACH ST	0	0	73	73	0	0	1	0.0	0.0	12.0	28
NB	WASHINGTON ST	0	585	0	585	0	2	0	0.0	10.0	0.0	32
SB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	40

TOTAL VOLUME = 686

TRAFFIC & ROADWAY CONDITIONS

DIR	GRADE	%HV	ADJ PARK Y/N	MOVES	BUSES	PHF	PEDESTRIANS CROSS	BUT	MIN TIME	ARR TYPE
EB	0.0%	2.0%	N	15	0	.900	200	Y	10.0	3
WB	0.0%	2.0%	Y	10	0	.900	200	Y	10.0	3
NB	0.0%	2.0%	N	15	15	.900	200	Y	17.0	3
SB	0.0%	0.0%	N	0	0	.000	200	Y	17.0	3

PHASINGS

	EASTBOUND l	t	r	p	WESTBOUND l	t	r	p	NORTHBOUND l	t	r	p	SOUTHBOUND l	t	r	p	GREEN	Y+R	PRE/ACT
1	x											x					10.0	4	A
2					x					x			x				48.0	4	A
3					x				x				x				25.0	4	A

CYCLE= 95.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	28	0	0	.900	31	0	0
WB	0	0	73	.900	0	0	81
NB	0	585	0	.900	0	650	0
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
EB	LT	31	1	1.00	31	1.00	0.00
WB	RT	81	1	1.00	81	0.00	1.00
NB	TH	650	2	1.05	682	0.00	0.00

LAGRANGE ST/BEACH ST/WASHINGTON ST
EXISTING CONDITIONS: AM PEAK
date: 03-07-1989 time: 11:06:35

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	1.000	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1524
WB	RT	1800	1	1.000	0.990	1.000	0.849	1.000	0.900	0.850	1.000	1157
NB	TH	1900	2	0.933	0.990	1.000	1.000	0.969	0.900	1.000	1.000	2900

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	31	1524	0.02	0.11	160	0.19	*
WB	RT	81	1157	0.07	0.26	305	0.27	*
NB	TH	682	2900	0.24	0.51	1466	0.47	*

CYCLE= 95.0 LOST=12.0 SUM V/S CRIT= 0.33 TOTAL V/C= 0.37

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	0.19	*	0.11	95.0	29.50	160	0.00	1.00	29.50	D	0.7	3
WB	RT	0.27	*	0.26	95.0	21.08	305	0.00	0.85	17.92	C	1.6	6
NB	TH	0.47	*	0.51	95.0	11.55	1466	0.00	0.85	9.82	B	8.5	26

DIR	STREET	DELAY	LOS
EB	LAGRANGE ST	29.50	D
WB	BEACH ST	17.92	C
NB	WASHINGTON ST	9.82	B

INTERSECTION DELAY = 11.42 INTERSECTION LOS=B

for chosen cycle length 95.0
suggested timing phase 1 is 5.2 secs green, 4.0 secs yellow + red clear
suggested timing phase 2 is 59.9 secs green, 4.0 secs yellow + red clear
suggested timing phase 3 is 17.9 secs green, 4.0 secs yellow + red clear

LAGRANGE ST/BEACH ST/WASHINGTON ST
EXISTING CONDITIONS: PM PEAK
Date: 03-07-1989 Time: 11:09:41

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=6PM GEOMETRICS=6PM SIGNAL=6PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	LAGRANGE ST	27	0	0	27	1	0	0	12.0	0.0	0.0	22
WB	BEACH ST	0	0	305	305	0	0	1	0.0	0.0	12.0	28
NB	WASHINGTON ST	0	409	0	409	0	2	0	0.0	10.0	0.0	32
SB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	40

TOTAL VOLUME = 741

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	15	0	.900	200	Y	10.0	3
WB	0.0%	2.0%	Y	10	0	.900	200	Y	10.0	3
NB	0.0%	2.0%	N	15	15	.900	200	Y	17.0	3
SB	0.0%	0.0%	N	0	0	.000	200	Y	17.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*											*					10.0	4	A
2				*				*		*							48.0	4	A
3				*			*					*					25.0	4	A

CYCLE= 95.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	27	0	0	.900	30	0	0
WB	0	0	305	.900	0	0	339
NB	0	409	0	.900	0	454	0
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT	30	1	1.00	30	1.00	0.00
WB	RT	339	1	1.00	339	0.00	1.00
NB	TH	454	2	1.05	477	0.00	0.00

LAGRANGE ST/BEACH ST/WASHINGTON ST
EXISTING CONDITIONS: PM PEAK
date: 03-07-1989 time: 11:09:43

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	1.000	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1524
WB	RT	1800	1	1.000	0.990	1.000	0.849	1.000	0.900	0.850	1.000	1157
NB	TH	1800	2	0.933	0.990	1.000	1.000	0.969	0.900	1.000	1.000	2900

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	30	1524	0.02	0.11	160	0.19	*
WB	RT	339	1157	0.29	0.26	305	1.11	*
NB	TH	477	2900	0.16	0.51	1466	0.33	*

CYCLE= 95.0 LOST=12.0 SUM V/S CRIT= 0.48 TOTAL V/C= 0.55

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	0.19	*	0.11	95.0	29.48	160	0.00	1.00	29.48	D	0.7	3
WB	RT	1.11	*	0.26	95.0	27.71	305	67.48	0.85	80.92	F	13.2	41
NB	TH	0.33	*	0.51	95.0	10.58	1466	0.00	0.85	8.99	B	5.9	19

DIR	STREET	DELAY	LOS
EB	LAGRANGE ST	29.48	D
WB	BEACH ST	80.92	F
NB	WASHINGTON ST	8.99	B

INTERSECTION DELAY = 38.53 INTERSECTION LOS=D

for chosen cycle length 95.0
suggested timing phase 1 is 3.4 secs green, 4.0 secs yellow + red clear
suggested timing phase 2 is 28.6 secs green, 4.0 secs yellow + red clear
suggested timing phase 3 is 50.9 secs green, 4.0 secs yellow + red clear

BOYLSTON ST/ESSEX ST/WASHINGTON ST
EXISTING CONDITIONS: AM PEAK HOUR
Date: 03-07-1989 Time: 12:05:35

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=7AM GEOMETRICS=7AM SIGNAL=7AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

DIR	STREET	VOLUMES LT	TH	RT	TOTAL	# OF LANES LT	TH	RT	LANE WIDTH LT	TH	RT	CROSS WALK
EB	BOYLSTON ST	127	620	0	747	1	2	0	11.0	11.0	0.0	28
WB	ESSEX ST	0	0	0	0	0	0	0	0.0	0.0	0.0	31
NB	WASHINGTON ST	0	343	343	686	0	2	1	0.0	11.0	11.0	36
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	36

TOTAL VOLUME = 1433

TRAFFIC & ROADWAY CONDITIONS

DIR	GRADE	%HV	ADJ PARK Y/N	MOVES	BUSES	PHF	PEDESTRIANS CROSS	BUT	MIN TIME	ARR TYPE
EB	0.0%	2.0%	N	0	0	.930	200	Y	14.8	3
WB	0.0%	0.0%	N	0	0	.000	200		14.8	0
NB	0.0%	2.0%	N	0	0	.930	550	Y	16.0	3
SB	0.0%	0.0%	N	0	0	.000	750	Y	16.0	3

PHASINGS

	EASTBOUND l	t	r	p	WESTBOUND l	t	r	p	NORTHBOUND l	t	r	p	SOUTHBOUND l	t	r	p	GREEN	Y+R	PRE/ACT
1	*	*										*					29.0	4	A
2				*						*	*						25.0	4	A
3				*			*					*				*	0.0	18	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	127	620	0	.930	137	667	0
WB	0	0	0	.000	0	0	0
NB	0	343	343	.930	0	369	369
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
EB	LT	137	1	1.00	137	1.00	0.00
EB	TH	667	2	1.05	700	0.00	0.00
NB	TH	369	2	1.05	387	0.00	0.00
NB	RT	369	1	1.00	369	0.00	1.00

BOYLSTON ST/ESSEX ST/WASHINGTON ST
EXISTING CONDITIONS: AM PEAK HOUR
date: 03-07-1989 time: 12:05:37

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1473
EB	TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3101
NB	TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3101
NB	RT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	0.850	1.000	1318

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	137	1473	0.09	0.36	534	0.26	
EB	TH	700	3101	0.23	0.36	1124	0.62	*
NB	TH	387	3101	0.12	0.31	969	0.40	
NB	RT	369	1318	0.28	0.31	412	0.90	*

CYCLE= 80.0 LOST=26.0 SUM V/S CRIT= 0.51 TOTAL V/C= 0.75

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	0.26		0.36	80.0	13.62	534	0.00	1.00	13.62	B	1.9	7
EB	TH	0.62	*	0.36	80.0	15.96	1124	0.80	0.85	14.24	B	9.4	29
NB	TH	0.40		0.31	80.0	16.42	969	0.00	0.85	13.96	B	5.6	18
NB	RT	0.90	*	0.31	80.0	19.95	412	17.23	0.85	31.60	D	7.0	22

DIR	STREET	DELAY	LOS
EB	BOYLSTON ST	14.14	B
NB	WASHINGTON ST	22.57	C

INTERSECTION DELAY = 18.14 INTERSECTION LOS=C

for chosen cycle length 80.0
suggested timing phase 1 is 24.1 secs green, 4.0 secs yellow + red clear
suggested timing phase 2 is 29.9 secs green, 4.0 secs yellow + red clear
suggested timing phase 3 is 0.0 secs green, 18.0 secs yellow + red clear

BOYLSTON ST/ESSEX ST/WASHINGTON ST
EXISTING CONDITIONS: PM PEAK HOUR
Date: 03-07-1989 Time: 12:08:33

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=7PM GEOMETRICS=7PM SIGNAL=7PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

DIR	STREET	VOLUMES LT	TH	RT	TOTAL	# OF LANES LT	TH	RT	LANE WIDTH LT	TH	RT	CROSS WALK
EB	BOYLSTON ST	165	689	0	854	1	2	0	11.0	11.0	0.0	28
WB	ESSEX ST	0	0	0	0	0	0	0	0.0	0.0	0.0	31
NB	WASHINGTON ST	0	289	447	736	0	2	1	0.0	11.0	11.0	36
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	36

TOTAL VOLUME = 1590

TRAFFIC & ROADWAY CONDITIONS

DIR	GRADE	%HV	ADJ PARK Y/N	MOVES	BUSES	PHF	PEDESTRIANS CROSS	BUT	MIN TIME	ARR TYPE
EB	0.0%	2.0%	N	0	0	.910	200	Y	14.8	3
WB	0.0%	0.0%	N	0	0	.000	200		14.8	0
NB	0.0%	2.0%	N	0	0	.910	590	Y	16.0	3
SB	0.0%	0.0%	N	0	0	.000	750	Y	16.0	3

PHASINGS

	EASTBOUND l	t	r	p	WESTBOUND l	t	r	p	NORTHBOUND l	t	r	p	SOUTHBOUND l	t	r	p	GREEN	Y+R	PRE/ACT
1	*	*										*					29.0	4	A
2				*						*	*						25.0	4	A
3				*			*					*				*	0.0	18	A

CYCLE= 60.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	165	689	0	.910	181	757	0
WB	0	0	0	.000	0	0	0
NB	0	289	447	.910	0	318	491
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT	181	1	1.00	181	1.00	0.00
EB	TH	757	2	1.05	795	0.00	0.00
NB	TH	318	2	1.05	333	0.00	0.00
NB	RT	491	1	1.00	491	0.00	1.00

BOYLSTON ST/ESSEX ST/WASHINGTON ST
EXISTING CONDITIONS: PM PEAK HOUR
date: 03-07-1989 time: 12:08:35

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1473
EB	TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3101
NB	TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3101
NB	RT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	0.850	1.000	1318

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	181	1473	0.12	0.36	534	0.34	
EB	TH	795	3101	0.26	0.36	1124	0.71	*
NB	TH	333	3101	0.11	0.31	969	0.34	
NB	RT	491	1318	0.37	0.31	412	1.19	*

CYCLE= 80.0 LOST=26.0 SUM V/S CRIT= 0.63 TOTAL V/C= 0.93

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	0.34		0.36	80.0	14.09	534	0.00	1.00	14.09	B	2.6	9
EB	TH	0.71	*	0.36	80.0	16.61	1124	1.71	0.85	15.58	C	10.7	33
NB	TH	0.34		0.31	80.0	16.10	969	0.00	0.85	13.69	B	4.9	15
NB	RT	1.19	*	0.31	80.0	22.91	412	65.51	0.85	92.15	F	20.1	61

DIR	STREET	DELAY	LOS
EB	BOYLSTON ST	15.30	C
NB	WASHINGTON ST	60.42	F

INTERSECTION DELAY = 35.96 INTERSECTION LOS=D

for chosen cycle length 80.0
suggested timing phase 1 is 22.0 secs green, 4.0 secs yellow + red clear
suggested timing phase 2 is 32.0 secs green, 4.0 secs yellow + red clear
suggested timing phase 3 is 0.0 secs green, 18.0 secs yellow + red clear

BOYLSTON ST/ESSEX ST/WASHINGTON ST
EXISTING CONDITIONS: SATURDAY PEAK HOUR
Date: 03-07-1989 Time: 15:33:48

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=7SAT GEOMETRICS=7SAT SIGNAL=7SAT

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

DIR	STREET	VOLUMES LT	TH	RT	TOTAL	# OF LANES LT	TH	RT	LANE WIDTH LT	TH	RT	CROSS WALK
EB	BOYLSTON ST	185	563	0	748	1	2	0	11.0	11.0	0.0	28
WB	ESSEX ST	0	0	0	0	0	0	0	0.0	0.0	0.0	31
NB	WASHINGTON ST	0	217	222	439	0	2	1	0.0	11.0	11.0	36
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	36

TOTAL VOLUME = 1187

TRAFFIC & ROADWAY CONDITIONS

DIR	GRADE	%HV	ADJ PARK Y/N	MOVES	BUSES	PHF	PEDESTRIANS CROSS	BUT	MIN	ARR TIME	TYPE
EB	0.0%	2.0%	N	0	0	.930	200	Y		14.8	3
WB	0.0%	0.0%	N	0	0	.000	200			14.8	0
NB	0.0%	2.0%	N	0	0	.930	550	Y		16.0	3
SB	0.0%	0.0%	N	0	0	.000	750	Y		16.0	3

PHASINGS

	EASTBOUND l	t	r	p	WESTBOUND l	t	r	p	NORTHBOUND l	t	r	p	SOUTHBOUND l	t	r	p	GREEN	Y+R	PRE/ACT
1	*	*										*					29.0	4	A
2					*					*	*						25.0	4	A
3					*				*			*				*	0.0	18	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	185	563	0	.930	199	605	0
WB	0	0	0	.000	0	0	0
NB	0	217	222	.930	0	233	239
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT	199	1	1.00	199	1.00	0.00
EB	TH	605	2	1.05	636	0.00	0.00
NB	TH	233	2	1.05	245	0.00	0.00
NB	RT	239	1	1.00	239	0.00	1.00

BOYLSTON ST/ESSEX ST/WASHINGTON ST
EXISTING CONDITIONS: SATURDAY PEAK HOUR
date: 03-07-1989 time: 15:33:50

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1473
EB	TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3101
NB	TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3101
NB	RT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	0.850	1.000	1318

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	199	1473	0.14	0.36	534	0.37	
EB	TH	636	3101	0.20	0.36	1124	0.57	*
NB	TH	245	3101	0.08	0.31	969	0.25	
NB	RT	239	1318	0.18	0.31	412	0.58	*

CYCLE= 80.0 LOST=26.0 SUM V/S CRIT= 0.39 TOTAL V/C= 0.57

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	0.37		0.36	80.0	14.28	534	0.00	1.00	14.28	B	2.8	9
EB	TH	0.57	*	0.36	80.0	15.54	1124	0.37	0.85	13.52	B	8.6	27
NB	TH	0.25		0.31	80.0	15.60	969	0.00	0.85	13.26	B	3.6	12
NB	RT	0.58	*	0.31	80.0	17.55	412	1.26	0.85	15.99	C	3.6	12

DIR	STREET	DELAY	LOS
EB	BOYLSTON ST	13.70	B
NB	WASHINGTON ST	14.61	B

INTERSECTION DELAY = 14.04 INTERSECTION LOS=B

for chosen cycle length 80.0
suggested timing phase 1 is 26.7 secs green, 4.0 secs yellow + red clear
suggested timing phase 2 is 25.3 secs green, 4.0 secs yellow + red clear
suggested timing phase 3 is 0.0 secs green, 18.0 secs yellow + red clear

AVERY ST/HAYWARD ST/WASHINGTON ST
EXISTING CONDITIONS: AM PEAK
Date: 03-07-1989 Time: 14:30:49

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=8AM GEOMETRICS=8AM SIGNAL=8AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

DIR	STREET	VOLUMES LT	TH	RT	TOTAL	# OF LANES LT	TH	RT	LANE WIDTH LT	TH	RT	CROSS WALK
EB	AVERY ST	123	0	0	123	1	0	0	12.0	0.0	0.0	22
WB	HAYWARD ST	0	0	0	0	0	0	0	0.0	0.0	0.0	0
NB	WASHINGTON ST	0	435	35	470	0	2	0	0.0	12.0	0.0	36
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	0

TOTAL VOLUME = 593

TRAFFIC & ROADWAY CONDITIONS

DIR	GRADE	%HV	ADJ PARK Y/N	MOVES	BUSES	PHF	PEDESTRIANS CROSS	BUT	MIN	ARR TIME	TYPE
EB	0.0%	2.0%	Y	5	0	.900	200	Y	8.5		3
WB	0.0%	0.0%	N	0	0	.000	200	Y	8.5		0
NB	0.0%	2.0%	Y	10	0	.900	200	Y	12.0		3
SB	0.0%	0.0%	N	0	0	.000	200	Y	12.0		0

PHASINGS

	EASTBOUND l	t	r	p	WESTBOUND l	t	r	p	NORTHBOUND l	t	r	p	SOUTHBOUND l	t	r	p	GREEN	Y+R	PRE/ACT
1	*											*					12.0	4	A
2					*					*	*						60.0	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	123	0	0	.900	137	0	0
WB	0	0	0	.000	0	0	0
NB	0	435	35	.900	0	483	39
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
EB	LT	137	1	1.00	137	1.00	0.00
NB	TH-RT	522	2	1.05	548	0.00	0.07

AVERY ST/HAYWARD ST/WASHINGTON ST
EXISTING CONDITIONS: AM PEAK
date: 03-07-1989 time: 14:30:50

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	1.000	0.990	1.000	0.875	1.000	0.900	1.000	0.950	1333
NB	TH-RT	1800	2	1.000	0.990	1.000	0.925	1.000	0.900	0.989	1.000	2933

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	137	1333	0.10	0.15	200	0.68	*
NB	TH-RT	548	2933	0.19	0.75	2199	0.25	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.29 TOTAL V/C= 0.32

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	0.68	*	0.15	80.0	24.47	200	7.53	1.00	32.00	D	2.9	10
NB	TH-RT	0.25	*	0.75	80.0	2.34	2199	0.00	0.85	1.99	A	2.9	10

DIR	STREET	DELAY	LOS
EB	AVERY ST	32.00	D
NB	WASHINGTON ST	1.99	A

INTERSECTION DELAY = 7.97 INTERSECTION LOS=B

for chosen cycle length 80.0
suggested timing phase 1 is 25.5 secs green, 4.0 secs yellow + red clear
suggested timing phase 2 is 46.5 secs green, 4.0 secs yellow + red clear

AVERY ST/HAYWARD ST/WASHINGTON ST
EXISTING CONDITIONS: PM PEAK
Date: 03-07-1989 Time: 14:37:23

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=8PM GEOMETRICS=8PM SIGNAL=8PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

DIR	STREET	VOLUMES LT	TH	RT	TOTAL	# OF LANES LT	TH	RT	LANE WIDTH LT	TH	RT	CROSS WALK
EB	AVERY ST	139	0	0	139	1	0	0	12.0	0.0	0.0	22
WB	HAYWARD ST	0	0	0	0	0	0	0	0.0	0.0	0.0	0
NB	WASHINGTON ST	0	374	61	435	0	2	0	0.0	12.0	0.0	36
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	0

TOTAL VOLUME = 574

TRAFFIC & ROADWAY CONDITIONS

DIR	GRADE	%HV	ADJ PARK Y/N	MOVES	BUSES	PHF	PEDESTRIANS CROSS	BUT	MIN TIME	ARR TYPE
EB	0.0%	2.0%	Y	5	0	.900	200	Y	8.5	3
WB	0.0%	0.0%	N	0	0	.000	200	Y	5.5	0
NB	0.0%	2.0%	Y	10	0	.900	200	Y	12.0	3
SB	0.0%	0.0%	N	0	0	.000	200	Y	12.0	0

PHASINGS

	EASTBOUND l	t	r	p	WESTBOUND l	t	r	p	NORTHBOUND l	t	r	p	SOUTHBOUND l	t	r	p	GREEN	Y+R	PRE/ACT
1	*											*					12.0	4	A
2					*					*	*						60.0	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	139	0	0	.900	154	0	0
WB	0	0	0	.000	0	0	0
NB	0	374	61	.900	0	416	68
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
EB	LT	154	1	1.00	154	1.00	0.00
NB	TH-RT	487	2	1.05	508	0.00	0.14

AVERY ST/HAYWARD ST/WASHINGTON ST
EXISTING CONDITIONS: PM PEAK
date: 03-07-1989 time: 14:37:24

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	1.000	0.990	1.000	0.875	1.000	0.900	1.000	0.950	1333
NB	TH-RT	1800	2	1.000	0.990	1.000	0.925	1.000	0.900	0.979	1.000	2903

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	154	1333	0.12	0.15	200	0.77	*
NB	TH-RT	508	2903	0.17	0.75	2178	0.23	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.29 TOTAL V/C= 0.32

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	0.77	*	0.15	80.0	24.84	200	14.09	1.00	38.93	D	3.6	12
NB	TH-RT	0.23	*	0.75	80.0	2.30	2178	0.00	0.85	1.96	A	2.7	9

DIR	STREET	DELAY	LOS
EB	AVERY ST	38.93	D
NB	WASHINGTON ST	1.96	A

INTERSECTION DELAY = 10.58 INTERSECTION LOS=B

for chosen cycle length 80.0
suggested timing phase 1 is 28.7 secs green, 4.0 secs yellow + red clear
suggested timing phase 2 is 43.3 secs green, 4.0 secs yellow + red clear

WASHINGTON ST/AVE DE LAFAYETTE
EXISTING CONDITIONS: AM PEAK
Date: 03-07-1989 Time: 11:15:30

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=9AM GEOMETRICS=9AM SIGNAL=9AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

DIR	STREET	VOLUMES LT	TH	RT	TOTAL	# OF LANES LT	TH	RT	LANE WIDTH LT	TH	RT	CROSS WALK
EB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	22
WB	AVE DE LAFAYETTE	0	0	75	75	0	0	2	0.0	0.0	12.0	36
NB	WASHINGTON ST	0	354	199	553	0	2	0	0.0	12.0	0.0	36
SB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	40

TOTAL VOLUME = 628

TRAFFIC & ROADWAY CONDITIONS

DIR	GRADE	%HV	ADJ PARK Y/N	MOVES	BUSES	PHF	PEDESTRIANS CROSS	BUT	MIN	ARR TIME	TYPE
EB	0.0%	0.0%	N	15	0	.000	200	Y		12.5	3
WB	0.0%	2.0%	N	10	0	.900	200	Y		12.5	3
NB	0.0%	2.0%	N	15	5	.900	200	Y		17.0	3
SB	0.0%	0.0%	N	0	0	.000	200	Y		17.0	3

PHASINGS

	EASTBOUND l	t	r	p	WESTBOUND l	t	r	p	NORTHBOUND l	t	r	p	SOUTHBOUND l	t	r	p	GREEN	Y+R	PRE/ACT
1								*		*	*						56.0	4	A
2							*					*					16.0	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	0	0	75	.900	0	0	83
NB	0	354	199	.900	0	393	221
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
WB	RT	83	2	1.05	88	0.00	1.00
NB	TH-RT	614	2	1.05	645	0.00	0.36

WASHINGTON ST/AVE DE LAFAYETTE
EXISTING CONDITIONS: AM PEAK
date: 03-07-1989 time: 11:15:32

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	RT	1800	2	1.000	0.990	1.000	1.000	1.000	0.900	0.750	1.000	2406
NB	TH-RT	1800	2	1.000	0.990	1.000	1.000	0.990	0.900	0.912	1.000	2894

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	RT	88	2406	0.04	0.20	481	0.18	*
NB	TH-RT	645	2894	0.22	0.70	2026	0.32	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.26 TOTAL V/C= 0.29

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	RT	0.18	*	0.20	80.0	20.19	481	0.00	0.85	17.16	C	1.5	5
NB	TH-RT	0.32	*	0.70	80.0	3.52	2026	0.00	0.85	2.99	A	4.1	13

DIR	STREET	DELAY	LOS
WB	AVE DE LAFAYETTE	17.16	C
NB	WASHINGTON ST	2.99	A

INTERSECTION DELAY = 4.68 INTERSECTION LOS=A

for chosen cycle length 80.0
suggested timing phase 1 is 61.9 secs green, 4.0 secs yellow + red clear
suggested timing phase 2 is 10.1 secs green, 4.0 secs yellow + red clear

WASHINGTON ST/AVE DE LAFAYETTE
EXISTING CONDITIONS: PM PEAK
Date: 03-07-1989 Time: 11:18:04

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=9PM GEOMETRICS=9PM SIGNAL=9PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

DIR	STREET	VOLUMES LT	TH	RT	TOTAL	# OF LANES LT	TH	RT	LANE WIDTH LT	TH	RT	CROSS WALK
EB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	22
WB	AVE DE LAFAYETTE	0	0	169	169	0	0	2	0.0	0.0	12.0	36
NB	WASHINGTON ST	0	387	132	519	0	2	0	0.0	12.0	0.0	36
SB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	40

TOTAL VOLUME = 688

TRAFFIC & ROADWAY CONDITIONS

DIR	GRADE	%HV	ADJ PARK Y/N	MOVES	BUSES	PHF	PEDESTRIANS CROSS	BUT	MIN	TIME	ARR TYPE
EB	0.0%	0.0%	N	15	0	.000	200	Y		12.5	3
WB	0.0%	2.0%	N	10	0	.900	200	Y		12.5	3
NB	0.0%	2.0%	N	15	5	.900	200	Y		17.0	3
SB	0.0%	0.0%	N	0	0	.000	200	Y		17.0	3

PHASINGS

	EASTBOUND l	t	r	p	WESTBOUND l	t	r	p	NORTHBOUND l	t	r	p	SOUTHBOUND l	t	r	p	GREEN	Y+R	PRE/ACT
1								*		*	*						56.0	4	A
2							*					*					16.0	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	0	0	169	.900	0	0	188
NB	0	387	132	.900	0	430	147
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
WB	RT	188	2	1.05	197	0.00	1.00
NB	TH-RT	577	2	1.05	606	0.00	0.25

WASHINGTON ST/AVE DE LAFAYETTE
EXISTING CONDITIONS: PM PEAK
date: 03-07-1989 time: 11:18:05

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	RT	1800	2	1.000	0.990	1.000	1.000	1.000	0.900	0.750	1.000	2406
NB	TH-RT	1800	2	1.000	0.990	1.000	1.000	0.990	0.900	0.938	1.000	2977

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	RT	197	2406	0.08	0.20	481	0.41	*
NB	TH-RT	606	2977	0.20	0.70	2084	0.29	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.29 TOTAL V/C= 0.32

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	RT	0.41	*	0.20	80.0	21.19	481	0.00	0.85	18.01	C	3.3	11
NB	TH-RT	0.29	*	0.70	80.0	3.43	2084	0.00	0.85	2.92	A	3.8	12

DIR	STREET	DELAY	LOS
WB	AVE DE LAFAYETTE	18.01	C
NB	WASHINGTON ST	2.92	A

INTERSECTION DELAY = 6.63 INTERSECTION LOS=B

for chosen cycle length 80.0
suggested timing phase 1 is 51.3 secs green, 4.0 secs yellow + red clear
suggested timing phase 2 is 20.7 secs green, 4.0 secs yellow + red clear

KNEELAND ST/HARRISON AVE
EXISTING CONDITIONS: AM PEAK
Date: 03-16-1989 Time: 20:35:45

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=11AM GEOMETRICS=11AM SIGNAL=11AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	KNEELAND ST	0	679	78	757	0	2	1	0.0	11.0	11.0	60
WB	KNEELAND ST	72	687	0	759	0	3	0	0.0	11.0	0.0	60
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	26
SB	HARRISON AVE	84	119	145	348	0	1	0	0.0	12.0	0.0	26

TOTAL VOLUME = 1864

TRAFFIC & ROADWAY CONDITIONS

			ADJ. PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BLT	MIN TIME	TYPE
EB	0.0%	2.0%	Y	10	10	.960	200	Y	18.0	3
WB	0.0%	2.0%	Y	10	10	.960	200	Y	18.0	3
NB	0.0%	0.0%	N	0	0	.000	0		9.5	0
SB	0.0%	2.0%	Y	5	5	.960	200	Y	9.5	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1		*	*		*	*						*				*	32.0	4	A
2				*				*					*	*	*		40.0	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	679	78	.960	0	707	81
WB	72	687	0	.950	75	719	0
NB	0	0	0	.000	0	0	0
SB	84	119	145	.950	88	124	151

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	TH	707	2	1.05	743	0.00	0.00
EB	RT	81	1	1.00	81	0.00	1.00
WB	LT-TH	791	3	1.10	870	0.09	0.00
SB	LT-TH-RT	363	1	1.00	363	0.24	0.42

KNEELAND ST/HARRISON AVE
EXISTING CONDITIONS: AM PEAK
date: 03-16-1989 time: 20:35:47

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH	1500	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	2584
EB	RT	1500	1	0.967	0.990	1.000	0.849	0.958	0.900	0.850	1.000	894
WB	LT-TH	1500	3	0.967	0.990	1.000	0.950	0.986	0.900	1.000	0.828	3005
SB	LT-TH-RT	1900	1	1.000	0.990	1.000	0.875	0.979	0.900	0.804	0.944	933

SUPPLEMENTAL WORKSHEET FOR LEFT-TURN ADJUSTMENT FACTOR FLT

INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	No	Vo	Plto	LGo
WB	90	32	3	791	791	75	0.09	2	707	0.00	0

CALCULATIONS

DIR	Sop	Vo	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
WB	3600	0.196	20.264	0.433	0.552	11.736	0.448	1.607	2.598	0.484	0.828

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH	743	2584	0.29	0.40	1034	0.72	
EB	RT	91	894	0.09	0.40	357	0.23	
WB	LT-TH	870	3005	0.29	0.40	1202	0.72	*
SB	LT-TH-RT	363	933	0.39	0.50	466	0.78	*

CYCLE= 90.0 LOST= 0.0 SUM V/S CRIT= 0.68 TOTAL V/C= 0.75

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH	0.72		0.40	90.0	15.36	1034	2.04	0.85	14.78	B	9.4	29
EB	RT	0.23		0.40	90.0	12.04	357	0.00	0.85	10.23	B	1.1	4
WB	LT-TH	0.72	*	0.40	90.0	16.40	1202	1.83	0.85	14.64	B	10.5	33
SB	LT-TH-RT	0.78	*	0.50	90.0	12.43	466	6.80	0.85	16.35	C	4.2	13

DIR	STREET	DELAY	LOS
EB	KNEELAND ST	14.34	B
WB	KNEELAND ST	14.64	B
SB	HARRISON AVE	16.35	C

INTERSECTION DELAY = 14.82 INTERSECTION LOS=B

for chosen cycle length 90.0
suggested timing phase 1 is 30.7 secs green, 4.0 secs yellow + red clear
suggested timing phase 2 is 41.3 secs green, 4.0 secs yellow + red clear

NEELAND ST/HARRISON AVE
XISTING CONDITIONS: PM PEAK
te: 03-15-1989 Time: 10:56:18

85 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
ST DATA SET NAMES LOADED OR SAVED
LUME=11PM GEOMETRICS=11PM SIGNAL=11PM

CATED IN CBD:Y

OLUME & GEOMETRICS

R	STREET	VOLUMES LT	TH	RT	TOTAL	# OF LANES LT	TH	RT	LANE WIDTH LT	TH	RT	CROSS WALK
	KNEELAND ST	0	723	72	795	0	2	1	0.0	11.0	11.0	60
	KNEELAND ST	75	714	0	789	0	3	0	0.0	11.0	0.0	60
		0	0	0	0	0	0	0	0.0	0.0	0.0	26
	HARRISON AVE	169	212	158	539	0	1	0	0.0	12.0	0.0	26

AL VOLUME = 2123

RAFFIC & ROADWAY CONDITIONS

GRADE	%HV	ADJ PARK Y/N	MOVES	BUSES	PHF	PEDESTRIANS CROSS	BUT	MIN	TIME	ARR TYPE
0.0%	2.0%	Y	10	10	.950	200	Y		18.0	3
0.0%	2.0%	Y	10	10	.950	200	Y		18.0	3
0.0%	0.0%	N	0	0	.000	0			9.5	0
0.0%	2.0%	Y	5	5	.950	200	Y		9.5	3

HASINGS

EASTBOUND l	t	r	p	WESTBOUND l	t	r	p	NORTHBOUND l	t	r	p	SOUTHBOUND l	t	r	p	GREEN	Y+R	PRE/ACT
	*	*		*	*						*				*	32.0	4	A
			*			*						*	*	*		40.0	4	A

LE= 80.0

OLUME ADJUSTMENT WORKSHEET

T 1 (MOVEMENT ADJUSTMENTS)

	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
	0	723	72	.950	0	761	76
	75	714	0	.950	79	752	0
	0	0	0	.000	0	0	0
	169	212	158	.950	178	223	166

T 2 (LANE GROUP ADJUSTMENTS)

	LN GROUP	FLOW	N	LU	v	Plt	Prt
	TH	761	2	1.05	799	0.00	0.00
	RT	76	1	1.00	76	0.00	1.00
	LT-TH	831	3	1.10	914	0.10	0.00
	LT-TH-RT	567	1	1.00	567	0.31	0.29

KNEELAND ST/HARRISON AVE
EXISTING CONDITIONS: PM PEAK
date: 03-15-1989 time: 10:56:20

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH	1500	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	2584
EB	RT	1500	1	0.967	0.990	1.000	0.849	0.958	0.900	0.850	1.000	894
WB	LT-TH	1500	3	0.967	0.990	1.000	0.950	0.986	0.900	1.000	0.810	2939
SB	LT-TH-RT	1800	1	1.000	0.990	1.000	0.875	0.979	0.900	0.833	0.828	947

SUPPLEMENTAL WORKSHEET FOR LEFT-TURN ADJUSTMENT FACTOR FLT

INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	No	Vo	Plto	LGo
WB	80	32	3	831	831	79	0.10	2	761	0.00	0

CALCULATIONS

DIR	Sop	Vo	Gu	Fs	Pl	Gq	Ft	Gf	El	Fm	Flt
WB	3600	0.211	19.132	0.399	0.596	12.868	0.404	1.351	2.817	0.429	0.810

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH	799	2584	0.31	0.40	1034	0.77	
EB	RT	76	894	0.08	0.40	357	0.21	
WB	LT-TH	914	2939	0.31	0.40	1176	0.78	*
SB	LT-TH-RT	567	947	0.50	0.50	473	1.20	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.91 TOTAL V/C= 1.01

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH	0.77		0.40	80.0	15.84	1034	3.10	0.85	16.10	C	10.1	31
EB	RT	0.21		0.40	80.0	11.96	357	0.00	0.85	10.16	B	1.0	4
WB	LT-TH	0.78	*	0.40	80.0	15.88	1176	2.82	0.85	15.90	C	11.1	34
SB	LT-TH-RT	1.20	*	0.50	80.0	18.97	473	85.37	0.85	88.59	F	21.3	65

DIR	STREET	DELAY	LOS
EB	KNEELAND ST	15.59	C
WB	KNEELAND ST	15.90	C
SB	HARRISON AVE	88.69	F

INTERSECTION DELAY = 33.31 INTERSECTION LOS=D

for chosen cycle length 80.0
suggested timing phase 1 is 24.6 secs green, 4.0 secs yellow + red clear
suggested timing phase 2 is 47.4 secs green, 4.0 secs yellow + red clear

CHAUNCY ST/AVE DE LAFAYETTE
EXISTING CONDITIONS: AM PEAK HOUR
Date: 03-07-1989 Time: 12:23:25

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=15AM GEOMETRICS=15AM SIGNAL=15AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

DIR	STREET	VOLUMES LT	TH	RT	TOTAL	# OF LANES LT	TH	RT	LANE WIDTH LT	TH	RT	CROSS WALK
EB	AVE DE LAFAYETTE	0	0	0	0	0	0	0	0.0	0.0	0.0	0
WB	AVE DE LAFAYETTE	0	12	12	24	0	2	0	0.0	11.0	0.0	44
NB	CHAUNCY ST	16	243	0	259	1	1	0	11.0	10.0	0.0	40
SB	CHAUNCY ST	0	0	168	168	0	0	1	0.0	0.0	14.0	36

TOTAL VOLUME = 451

TRAFFIC & ROADWAY CONDITIONS

DIR	GRADE	%HV	ADJ PARK Y/N	MOVES	BUSES	PHF	PEDESTRIANS CROSS	BUT	MIN	ARR TIME	TYPE
EB	0.0%	2.0%	N	0	10	.000	15		11.0		3
WB	0.0%	2.0%	Y	10	10	.900	180	N	11.0		3
NB	0.0%	2.0%	Y	10	20	.900	100	N	13.0		3
SB	0.0%	2.0%	N	0	25	.900	310	N	13.0		3

PHASINGS

	EASTBOUND l	t	r	p	WESTBOUND l	t	r	p	NORTHBOUND l	t	r	p	SOUTHBOUND l	t	r	p	GREEN	Y+R	PRE/ACT
1								*				*			*		26.0	3	A
2						*	*					*				*	17.0	3	A
3				*				*	*	*							27.0	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	0	12	12	.900	0	13	13
NB	16	243	0	.900	18	270	0
SB	0	0	168	.900	0	0	187

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
WB	TH-RT	27	2	1.05	28	0.00	0.50
NB	LT	18	1	1.00	18	1.00	0.00
NB	TH	270	1	1.00	270	0.00	0.00
SB	RT	187	1	1.00	187	0.00	1.00

CHAUNCY ST/AVE DE LAFAYETTE
EXISTING CONDITIONS: AM PEAK HOUR
date: 03-07-1989 time: 12:23:27

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	TH-RT	1800	2	0.967	0.990	1.000	0.925	0.979	0.900	0.851	1.000	2389
NB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1473
NB	TH	1800	1	0.933	0.990	1.000	0.849	0.917	0.900	1.000	1.000	1165
SB	RT	1800	1	1.067	0.990	1.000	1.000	0.896	0.900	0.850	1.000	1303

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	TH-RT	28	2389	0.01	0.21	508	0.06	*
NB	LT	18	1473	0.01	0.34	497	0.04	
NB	TH	270	1165	0.23	0.34	393	0.69	*
SB	RT	187	1303	0.14	0.33	423	0.44	*

CYCLE= 80.0 LOST=10.0 SUM V/S CRIT= 0.39 TOTAL V/C= 0.44

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	TH-RT	0.06	*	0.21	80.0	19.08	508	0.00	0.85	16.21	C	0.5	2
NB	LT	0.04		0.34	80.0	13.51	497	0.00	1.00	13.51	B	0.3	1
NB	TH	0.69	*	0.34	80.0	17.37	393	4.04	0.85	18.20	C	4.0	13
SB	RT	0.44	*	0.33	80.0	16.17	423	0.00	0.85	13.74	B	2.8	9

DIR	STREET	DELAY	LOS
WB	AVE DE LAFAYETTE	16.21	C
NB	CHAUNCY ST	17.91	C
SB	CHAUNCY ST	13.74	B

INTERSECTION DELAY = 16.27 INTERSECTION LOS=C

for chosen cycle length 80.0
suggested timing phase 1 is 25.9 secs green, 3.0 secs yellow + red clear
suggested timing phase 2 is 2.1 secs green, 3.0 secs yellow + red clear
suggested timing phase 3 is 41.9 secs green, 4.0 secs yellow + red clear

CHAUNCY ST/AVE DE LAFAYETTE
EXISTING CONDITIONS: PM PEAK HOUR
Date: 03-07-1989 Time: 12:27:14

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=15AM GEOMETRICS=15AM SIGNAL=15AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

DIR	STREET	VOLUMES LT	TH	RT	TOTAL	# OF LANES LT	TH	RT	LANE WIDTH LT	TH	RT	CROSS WALK
EB	AVE DE LAFAYETTE	0	0	0	0	0	0	0	0.0	0.0	0.0	0
WB	AVE DE LAFAYETTE	0	31	30	61	0	2	0	0.0	11.0	0.0	44
NB	CHAUNCY ST	20	271	0	291	1	1	0	11.0	10.0	0.0	40
SB	CHAUNCY ST	0	0	223	223	0	0	1	0.0	0.0	14.0	36

TOTAL VOLUME = 575

TRAFFIC & ROADWAY CONDITIONS

DIR	GRADE	%HV	ADJ PARK Y/N	MOVES	BUSES	PHF	PEDESTRIANS CROSS	BUT	MIN TIME	ARR TYPE
EB	0.0%	2.0%	N	0	10	.000	15		11.0	3
WB	0.0%	2.0%	Y	10	10	.900	180	N	11.0	3
NB	0.0%	2.0%	Y	10	20	.900	100	N	13.0	3
SB	0.0%	2.0%	N	0	25	.900	310	N	13.0	3

PHASINGS

	EASTBOUND l	t	r	c	WESTBOUND l	t	r	p	NORTHBOUND l	t	r	p	SOUTHBOUND l	t	r	p	GREEN	Y+R	PRE/ACT
1								*				*			*		26.0	3	A
2						*	*					*				*	17.0	3	A
3				*				*	*	*							27.0	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	0	31	30	.900	0	34	33
NB	20	271	0	.900	22	301	0
SB	0	0	223	.900	0	0	248

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
WB	TH-RT	68	2	1.05	71	0.00	0.49
NB	LT	22	1	1.00	22	1.00	0.00
NB	TH	301	1	1.00	301	0.00	0.00
SB	RT	248	1	1.00	248	0.00	1.00

CHAUNCY ST/AVE DE LAFAYETTE
EXISTING CONDITIONS: PM PEAK HOUR
date: 03-07-1989 time: 12:27:16

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	TH-RT	1800	2	0.967	0.990	1.000	0.925	0.979	0.900	0.854	1.000	2396
NB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1473
NB	TH	1800	1	0.933	0.990	1.000	0.849	0.917	0.900	1.000	1.000	1165
SB	RT	1800	1	1.067	0.990	1.000	1.000	0.896	0.900	0.850	1.000	1303

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	TH-RT	71	2396	0.03	0.21	509	0.14	*
NB	LT	22	1473	0.02	0.34	497	0.04	
NB	TH	301	1165	0.26	0.34	393	0.77	*
SB	RT	248	1303	0.19	0.33	423	0.59	*

CYCLE= 80.0 LOST=10.0 SUM V/S CRIT= 0.48 TOTAL V/C= 0.55

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	TH-RT	0.14	*	0.21	80.0	19.43	509	0.00	0.85	16.52	C	1.2	4
NB	LT	0.04		0.34	80.0	13.55	497	0.00	1.00	13.55	B	0.3	2
NB	TH	0.77	*	0.34	80.0	17.99	393	7.33	0.85	21.52	C	4.6	15
SB	RT	0.59	*	0.33	80.0	17.10	423	1.33	0.85	15.67	C	3.7	12

DIR	STREET	DELAY	LOS
WB	AVE DE LAFAYETTE	16.52	C
NB	CHAUNCY ST	20.97	C
SB	CHAUNCY ST	15.67	C

INTERSECTION DELAY = 18.43 INTERSECTION LOS=C

for chosen cycle length 80.0
suggested timing phase 1 is 27.8 secs green, 3.0 secs yellow + red clear
suggested timing phase 2 is 4.3 secs green, 3.0 secs yellow + red clear
suggested timing phase 3 is 37.8 secs green, 4.0 secs yellow + red clear

CHAUNCY ST/AVE DE LAFAYETTE
EXISTING CONDITIONS: SATURDAY PEAK HOUR
Date: 03-07-1989 Time: 15:39:52

1985 HCM - CHAPTER 9: SIGNALIZED ZINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=15SAT GEOMETRICS=15SAT SIGNAL=15SAT

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	AVE DE LAFAYETTE	0	0	0	0	0	0	0	0.0	0.0	0.0	0
WB	AVE DE LAFAYETTE	0	63	8	91	0	2	0	0.0	11.0	0.0	44
NB	CHAUNCY ST	15	240	0	255	1	1	0	11.0	10.0	0.0	40
SB	CHAUNCY ST	0	0	188	188	0	0	1	0.0	0.0	14.0	36

TOTAL VOLUME = 534

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK			PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.000	15		11.0	3
WB	0.0%	2.0%	Y	10	10	.900	180	N	11.0	3
NB	0.0%	2.0%	Y	10	20	.900	100	N	13.0	3
SB	0.0%	2.0%	N	0	25	.900	310	N	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1								*				*			*		26.0	3	A
2						*	*					*				*	17.0	3	A
3				*				*	*	*							27.0	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	0	63	9	.900	0	92	9
NB	15	240	0	.900	17	267	0
SB	0	0	188	.900	0	0	209

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
WB	TH-RT	101	2	1.05	106	0.00	0.09
NB	LT	17	1	1.00	17	1.00	0.00
NB	TH	267	1	1.00	267	0.00	0.00
SB	RT	209	1	1.00	209	0.00	1.00

CHAUNCY ST/AVE DE LAFAYETTE
EXISTING CONDITIONS: SATURDAY PEAK HOUR
date: 03-07-1989 time: 15:39:54

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	TH-RT	1800	2	0.967	0.990	1.000	0.925	0.979	0.900	0.974	1.000	2734
NB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1473
NB	TH	1800	1	0.933	0.990	1.000	0.849	0.917	0.900	1.000	1.000	1165
SB	RT	1800	1	1.067	0.990	1.000	1.000	0.896	0.900	0.850	1.000	1303

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	TH-RT	106	2734	0.04	0.21	581	0.18	*
NB	LT	17	1473	0.01	0.34	497	0.03	
NB	TH	267	1165	0.23	0.34	393	0.68	*
SB	RT	209	1303	0.16	0.33	423	0.49	*

CYCLE= 80.0 LOST=10.0 SUM V/S CRIT= 0.43 TOTAL V/C= 0.49

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	TH-RT	0.18	*	0.21	80.0	19.61	581	0.00	0.85	16.67	C	1.8	6
NB	LT	0.03		0.34	80.0	13.50	497	0.00	1.00	13.50	B	0.2	1
NB	TH	0.68	*	0.34	80.0	17.30	393	3.77	0.85	17.91	C	3.9	13
SB	RT	0.49	*	0.33	80.0	16.50	423	0.00	0.85	14.02	B	3.1	10

DIR	STREET	DELAY	LOS
WB	AVE DE LAFAYETTE	16.67	C
NB	CHAUNCY ST	17.65	C
SB	CHAUNCY ST	14.02	B

INTERSECTION DELAY = 16.21 INTERSECTION LOS=C

for chosen cycle length 80.0
suggested timing phase 1 is 26.2 secs green, 3.0 secs yellow + red clear
suggested timing phase 2 is 6.4 secs green, 3.0 secs yellow + red clear
suggested timing phase 3 is 37.4 secs green, 4.0 secs yellow + red clear

SUMMER ST/ARCH ST/CHAUNCY ST
EXISTING CONDITIONS: AM PEAK
Date: 03-07-1989 Time: 15:15:40

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=17AM GEOMETRICS=17AM SIGNAL=17AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

DIR	STREET	VOLUMES LT	TH	RT	TOTAL	# OF LANES LT	TH	RT	LANE WIDTH LT	TH	RT	CROSS WALK
EB	SUMMER ST	17	37	0	54	0	1	0	0.0	10.0	0.0	30
WB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
NB	CHAUNCY ST	0	233	50	283	0	1	0	0.0	10.0	0.0	30
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	0

TOTAL VOLUME = 337

TRAFFIC & ROADWAY CONDITIONS

DIR	GRADE	%HV	ADJ PARK Y/N	MOVES	BUSES	PHF	PEDESTRIANS CROSS	BUT	MIN TIME	ARR TYPE
EB	0.0%	2.0%	Y	5	0	.960	300	Y	10.5	3
WB	0.0%	0.0%	N	0	0	.000	300	Y	10.5	0
NB	0.0%	2.0%	Y	5	0	.960	400	Y	10.5	3
SB	0.0%	0.0%	N	0	0	.000	400	Y	10.5	0

PHASINGS

	EASTBOUND l	t	r	p	WESTBOUND l	t	r	p	NORTHBOUND l	t	r	p	SOUTHBOUND l	t	r	p	GREEN	Y+R	PRE/ACT
1				*				*		*	*						32.0	4	A
2	*	*										*				*	20.0	4	A

CYCLE= 60.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	17	37	0	.960	18	39	0
WB	0	0	0	.000	0	0	0
NB	0	233	50	.960	0	243	52
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT-TH	56	1	1.00	56	0.31	0.00
NB	TH-RT	295	1	1.00	295	0.00	0.18

SUMMER ST/ARCH ST/CHAUNCY ST
EXISTING CONDITIONS: AM PEAK
date: 03-07-1989 time: 15:15:43

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH	1800	1	0.933	0.990	1.000	0.875	1.000	0.900	1.000	0.798	1044
NB	TH-RT	1800	1	0.933	0.990	1.000	0.875	1.000	0.900	0.851	1.000	1114

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH	56	1044	0.05	0.33	348	0.16	*
NB	TH-RT	295	1114	0.26	0.53	594	0.50	*

CYCLE= 60.0 LOST= 8.0 SUM V/S CRIT= 0.32 TOTAL V/C= 0.37

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH	0.16	*	0.33	60.0	10.71	348	0.00	0.85	9.10	B	0.6	3
NB	TH-RT	0.50	*	0.53	60.0	6.75	594	0.00	0.85	5.74	B	2.3	8

DIR	STREET	DELAY	LOS
EB	SUMMER ST	9.10	B
NB	CHAUNCY ST	5.74	B

INTERSECTION DELAY = 6.28 INTERSECTION LOS=B

for chosen cycle length 60.0
suggested timing phase 1 is 43.2 secs green, 4.0 secs yellow + red clear
suggested timing phase 2 is 8.8 secs green, 4.0 secs yellow + red clear

SUMMER ST/ARCH ST/CHAUNCY ST
EXISTING CONDITIONS: PM PEAK
Date: 03-07-1989 Time: 15:13:45

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=17AM GEOMETRICS=17AM SIGNAL=17AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

DIR	STREET	VOLUMES LT	TH	RT	TOTAL	# OF LANES LT	TH	RT	LANE WIDTH LT	TH	RT	CROSS WALK
EB	SUMMER ST	44	84	0	128	0	1	0	0.0	10.0	0.0	30
WB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
NB	CHAUNCY ST	0	277	70	347	0	1	0	0.0	10.0	0.0	30
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	0

TOTAL VOLUME = 475

TRAFFIC & ROADWAY CONDITIONS

DIR	GRADE	%HV	ADJ PARK Y/N	MOVES	BUSES	PHF	PEDESTRIANS CROSS	BUT	MIN TIME	ARR TYPE
EB	0.0%	2.0%	Y	5	0	.860	375	Y	10.5	3
WB	0.0%	0.0%	N	0	0	.000	375	Y	10.5	0
NB	0.0%	2.0%	Y	5	0	.860	500	Y	10.5	3
SB	0.0%	0.0%	N	0	0	.000	500	Y	10.5	0

PHASINGS

	EASTBOUND l	t	r	p	WESTBOUND l	t	r	p	NORTHBOUND l	t	r	p	SOUTHBOUND l	t	r	p	GREEN	Y+R	PRE/ACT
1				*				*		*	*						32.0	4	A
2	*	*										*				*	20.0	4	A

CYCLE= 60.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	44	84	0	.860	51	98	0
WB	0	0	0	.000	0	0	0
NB	0	277	70	.860	0	322	81
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT-TH	149	1	1.00	149	0.34	0.00
NB	TH-RT	403	1	1.00	403	0.00	0.20

SUMMER ST/ARCH ST/CHAUNCY ST
EXISTING CONDITIONS: PM PEAK
date: 03-07-1989 time: 15:13:47

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH	1900	1	0.933	0.990	1.000	0.875	1.000	0.900	1.000	0.772	1010
NB	TH-RT	1900	1	0.933	0.990	1.000	0.875	1.000	0.900	0.837	1.000	1095

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH	149	1010	0.15	0.33	337	0.44	*
NB	TH-RT	403	1095	0.37	0.53	584	0.69	*

CYCLE= 60.0 LOST= 8.0 SUM V/S CRIT= 0.52 TOTAL V/C= 0.59

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH	0.44	*	0.33	60.0	11.88	337	0.00	0.85	10.10	B	1.7	6
NB	TH-RT	0.69	*	0.53	60.0	7.86	584	2.84	0.85	9.10	B	3.1	10

DIR	STREET	DELAY	LOS
EB	SUMMER ST	10.10	B
NB	CHAUNCY ST	9.10	B

INTERSECTION DELAY = 9.37 INTERSECTION LOS=B

for chosen cycle length 60.0
suggested timing phase 1 is 37.1 secs green, 4.0 secs yellow + red clear
suggested timing phase 2 is 14.9 secs green, 4.0 secs yellow + red clear

SUMMER ST/ARCH ST/CHAUNCY ST
EXISTING CONDITIONS: SAT PEAK
Date: 03-07-1989 Time: 15:21:41

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=17AM GEOMETRICS=17AM SIGNAL=17AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

DIR	STREET	VOLUMES LT	TH	RT	TOTAL	# OF LANES LT	TH	RT	LANE WIDTH LT	TH	RT	CROSS WALK
EB	SUMMER ST	58	122	0	180	0	1	0	0.0	10.0	0.0	30
WB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
NB	CHAUNCY ST	0	208	72	280	0	1	0	0.0	10.0	0.0	30
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	0

TOTAL VOLUME = 460

TRAFFIC & ROADWAY CONDITIONS

DIR	GRADE	%HV	ADJ PARK Y/N	MOVES	BUSES	PHF	PEDESTRIANS CROSS	BUT	MIN TIME	ARR TYPE
EB	0.0%	2.0%	Y	5	0	.910	375	Y	10.5	3
WB	0.0%	0.0%	N	0	0	.000	375	Y	10.5	0
NB	0.0%	2.0%	Y	5	0	.910	500	Y	10.5	3
SB	0.0%	0.0%	N	0	0	.000	500	Y	10.5	0

PHASINGS

	EASTBOUND l	t	r	p	WESTBOUND l	t	r	p	NORTHBOUND l	t	r	p	SOUTHBOUND l	t	r	p	GREEN	Y+R	PRE/ACT
1				*				*		*	*						32.0	4	A
2	*	*										*				*	20.0	4	A

CYCLE= 60.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	58	122	0	.910	64	134	0
WB	0	0	0	.000	0	0	0
NB	0	208	72	.910	0	229	79
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT-TH	198	1	1.00	198	0.32	0.00
NB	TH-RT	309	1	1.00	308	0.00	0.26

SUMMER ST/ARCH ST/CHAUNCY ST
EXISTING CONDITIONS: SAT PEAK
date: 03-07-1989 time: 15:21:44

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH	1800	1	0.933	0.990	1.000	0.875	1.000	0.900	1.000	0.780	1021
NB	TH-RT	1800	1	0.933	0.990	1.000	0.875	1.000	0.900	0.819	1.000	1073

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH	198	1021	0.19	0.33	340	0.58	*
NB	TH-RT	308	1073	0.29	0.53	572	0.54	*

CYCLE= 60.0 LOST= 8.0 SUM V/S CRIT= 0.48 TOTAL V/C= 0.55

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH	0.58	*	0.33	60.0	12.57	340	1.56	0.85	12.01	B	2.2	
NB	TH-RT	0.54	*	0.53	60.0	6.96	572	0.40	0.85	6.25	B	2.4	

DIR	STREET	DELAY	LOS
EB	SUMMER ST	12.01	B
NB	CHAUNCY ST	6.25	B

INTERSECTION DELAY = 8.51 INTERSECTION LOS=B

for chosen cycle length 60.0
suggested timing phase 1 is 31.0 secs green, 4.0 secs yellow + red clear
suggested timing phase 2 is 21.0 secs green, 4.0 secs yellow + red clear

OTIS ST/KINGSTON ST/SUMMER ST
NO BUILD CONDITIONS: PM PEAK HOUR
Date: 03-07-1989 Time: 12:12:26

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=20PM GEOMETRICS=20PM SIGNAL=20PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

DIR	STREET	VOLUMES LT	TH	RT	TOTAL	# OF LANES LT	TH	RT	LANE WIDTH LT	TH	RT	CROSS WALK
EB	SUMMER ST	0	71	83	154	0	1	1	0.0	10.0	10.0	25
WB	SUMMER ST	62	0	0	62	1	0	0	10.0	0.0	0.0	32
NB	KINGSTON ST	0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	OTIS ST	92	345	0	427	1	1	0	10.0	10.0	0.0	25

TOTAL VOLUME = 663

TRAFFIC & ROADWAY CONDITIONS

DIR	GRADE	%HV	ADJ PARK Y/N	MOVES	BUSES	PHF	PEDESTRIANS CROSS	BUT	MIN TIME	ARR TYPE
EB	0.0%	2.0%	Y	10	0	.980	400	N	11.0	3
WB	0.0%	2.0%	N	0	0	.980	400	N	11.0	3
NB	0.0%	0.0%	N	0	0	.000	0		9.3	3
SB	0.0%	2.0%	N	0	0	.980	400	N	9.3	3

PHASINGS

	EASTBOUND l	t	r	p	WESTBOUND l	t	r	p	NORTHBOUND l	t	r	p	SOUTHBOUND l	t	r	p	GREEN	Y+R	PRE/ACT
1		*	*		*							*				*	22.0	4	A
2				*				*			*		*	*			50.0	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	71	83	.980	0	72	85
WB	62	0	0	.990	84	0	0
NB	0	0	0	.000	0	0	0
SB	92	345	0	.980	84	352	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	TH	72	1	1.00	72	0.00	0.00
EB	RT	85	1	1.00	85	0.00	1.00
WB	LT	84	1	1.00	84	1.00	0.00
SB	LT	84	1	1.00	84	1.00	0.00
SB	TH	352	1	1.00	352	0.00	0.00

OTIS ST/KINGSTON ST/SUMMER ST
NO BUILD CONDITIONS: PM PEAK HOUR
date: 03-07-1989 time: 12:12:28

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH	1800	1	0.933	0.990	1.000	1.000	1.000	0.900	1.000	1.000	1497
EB	RT	1800	1	0.933	0.990	1.000	0.849	1.000	0.900	0.850	1.000	1080
WB	LT	1800	1	0.933	0.990	1.000	1.000	1.000	0.900	1.000	0.838	1254
SB	LT	1800	1	0.933	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1422
SB	TH	1800	1	0.933	0.990	1.000	1.000	1.000	0.900	1.000	1.000	1497

SUPPLEMENTAL WORKSHEET FOR
LEFT-TURN ADJUSTMENT FACTOR FLT
INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	No	Vo	Plto	LGo
WB	80	22	1	84	0	84	1.00	1	72	0.00	0

CALCULATIONS

DIR	Gop	Yo	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
WB	1800	0.040	19.568	0.830	1.000	2.432	0.000	0.000	1.356	0.838	0.838

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH	72	1497	0.05	0.28	412	0.18	
EB	RT	85	1080	0.08	0.28	297	0.29	*
WB	LT	84	1254	0.07	0.28	345	0.24	
SB	LT	84	1422	0.06	0.63	889	0.09	
SB	TH	352	1497	0.24	0.63	936	0.38	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.31 TOTAL V/C= 0.35

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH	0.18		0.28	80.0	16.79	412	0.00	0.85	14.27	B	1.2	4
EB	RT	0.29	*	0.28	80.0	17.34	297	0.00	0.85	14.74	B	1.4	5
WB	LT	0.24		0.28	80.0	17.12	345	0.00	0.85	14.55	B	1.3	5
SB	LT	0.09		0.63	80.0	4.54	889	0.00	1.00	4.54	A	0.7	3
SB	TH	0.38	*	0.63	80.0	5.59	936	0.00	0.85	4.75	A	2.9	10

DIR	STREET	DELAY	LOS
EB	SUMMER ST	14.52	B
WB	SUMMER ST	14.55	B
SB	OTIS ST	4.71	A

INTERSECTION DELAY = 8.21 INTERSECTION LOS=B

for chosen cycle length 80.0
suggested timing phase 1 is 18.0 secs green, 4.0 secs yellow + red clear
suggested timing phase 2 is 54.0 secs green, 4.0 secs yellow + red clear

OTIS ST/KINGSTON ST/SUMMER ST
EXISTING CONDITIONS: AM PEAK HOUR
Date: 03-07-1989 Time: 12:11:02

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=20AM GEOMETRICS=20AM SIGNAL=20AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

DIR	STREET	VOLUMES LT	TH	RT	TOTAL	# OF LANES LT	TH	RT	LANE WIDTH LT	TH	RT	CROSS WALK
EB	SUMMER ST	0	39	48	87	0	1	1	0.0	10.0	10.0	25
WB	SUMMER ST	89	0	0	89	1	0	0	10.0	0.0	0.0	32
NB	KINGSTON ST	0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	OTIS ST	52	156	0	208	1	1	0	10.0	10.0	0.0	25

TOTAL VOLUME = 384

TRAFFIC & ROADWAY CONDITIONS

DIR	GRADE	%HV	ADJ PARK Y/N	MOVES	BUSES	PHF	PEDESTRIANS CROSS	BUT	MIN TIME	ARR TYPE
EB	0.0%	2.0%	Y	10	0	.880	400	N	11.0	3
WB	0.0%	2.0%	N	0	0	.880	400	N	11.0	3
NB	0.0%	0.0%	N	0	0	.000	0		9.3	3
SB	0.0%	2.0%	N	0	0	.880	400	N	9.3	3

PHASINGS

	EASTBOUND l	t	r	p	WESTBOUND l	t	r	p	NORTHBOUND l	t	r	p	SOUTHBOUND l	t	r	p	GREEN	Y+R	PRE/ACT
1		x	x		x							x				x	22.0	4	A
2				x				x					x	x			50.0	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	39	48	.880	0	44	55
WB	89	0	0	.880	101	0	0
NB	0	0	0	.000	0	0	0
SB	52	156	0	.880	59	177	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	TH	44	1	1.00	44	0.00	0.00
EB	RT	55	1	1.00	55	0.00	1.00
WB	LT	101	1	1.00	101	1.00	0.00
SB	LT	59	1	1.00	59	1.00	0.00
SB	TH	177	1	1.00	177	0.00	0.00

OTIS ST/KINGSTON ST/SUMMER ST
EXISTING CONDITIONS: AM PEAK HOUR
date: 03-07-1989 time: 12:11:04

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH	1800	1	0.933	0.990	1.000	1.000	1.000	0.900	1.000	1.000	1497
EB	RT	1800	1	0.933	0.990	1.000	0.849	1.000	0.900	0.850	1.000	1080
WB	LT	1800	1	0.933	0.990	1.000	1.000	1.000	0.900	1.000	0.885	1325
SB	LT	1800	1	0.933	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1422
SB	TH	1800	1	0.933	0.990	1.000	1.000	1.000	0.900	1.000	1.000	1497

SUPPLEMENTAL WORKSHEET FOR
LEFT-TURN ADJUSTMENT FACTOR FLT
INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	No	Vo	Plto	LGo
WB	80	22	1	101	0	101	1.00	1	44	0.00	0

CALCULATIONS

DIR	Soo	Vo	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
WB	1800	0.025	20.536	0.847	1.000	1.464	0.000	0.000	1.328	0.885	0.885

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH	44	1497	0.03	0.28	412	0.11	
EB	RT	55	1080	0.05	0.28	297	0.18	
WB	LT	101	1325	0.08	0.28	364	0.28	*
SB	LT	59	1422	0.04	0.63	889	0.07	
SB	TH	177	1497	0.12	0.63	936	0.19	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.19 TOTAL V/C= 0.22

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH	0.11		0.28	80.0	16.47	412	0.00	0.85	14.00	B	0.7	3
EB	RT	0.18		0.28	80.0	16.83	297	0.00	0.85	14.30	B	0.9	3
WB	LT	0.28	*	0.28	80.0	17.30	364	0.00	0.85	14.70	B	1.6	6
SB	LT	0.07		0.63	80.0	4.46	889	0.00	1.00	4.46	A	0.5	2
SB	TH	0.19	*	0.63	80.0	4.85	936	0.00	0.85	4.12	A	1.5	5

DIR	STREET	DELAY	LOS
EB	SUMMER ST	14.17	B
WB	SUMMER ST	14.70	B
SB	OTIS ST	4.21	A

INTERSECTION DELAY = 8.90 INTERSECTION LOS=B

for chosen cycle length 80.0
suggested timing phase 1 is 26.2 secs green, 4.0 secs yellow + red clear
suggested timing phase 2 is 43.8 secs green, 4.0 secs yellow + red clear

SEX ST/SURFACE ARTERY/LINCOLN ST
ISTING CONDITIONS: AM PEAK HOUR
e: 03-15-1989 Time: 11:19:08

S HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
T DATA SET NAMES LOADED OR SAVED
UME=21am GEOMETRICS=21am SIGNAL=21am

ATED IN CBD:Y

LUME & GEOMETRICS

STREET	VOLUMES LT	TH	RT	TOTAL	# OF LANES LT	TH	RT	LANE WIDTH LT	TH	RT	CROSS WALK
ESSEX ST	90	554	50	694	0	3	0	0.0	12.0	0.0	52
LINCOLN ST	70	977	32	1079	0	3	0	0.0	12.0	0.0	30
SURFACE ARTERY	59	502	18	579	0	3	0	0.0	11.0	0.0	56
SURFACE ARTERY	72	735	12	819	0	3	0	0.0	12.0	0.0	66

L VOLUME = 3171

AFFIC & ROADWAY CONDITIONS

GRADE	%HV	ADJ PARK Y/N	MOVES	BUSES	PHF	PEDESTRIANS CROSS	BUT	MIN	TIME	ARR TYPE
0.0%	2.0%	N	0	10	.870	30	Y		12.0	3
0.0%	2.0%	N	10	10	.870	200	Y		12.0	3
0.0%	2.0%	N	0	20	.970	90	Y		15.5	3
0.0%	2.0%	N	0	25	.870	380	Y		15.5	3

ASINGS

EASTBOUND l	t	r	p	WESTBOUND l	t	r	p	NORTHBOUND l	t	r	p	SOUTHBOUND l	t	r	p	GREEN	Y+R	PRE/ACT
*	*	*									*				*	15.0	4	A
			*				*	*	*	*		*	*	*		20.0	4	A
			*				*	*	*	*						30.0	4	A
				*	*	*					*				*	17.0	4	A

LE= 98.0

LUME ADJUSTMENT WORKSHEET
T 1 (MOVEMENT ADJUSTMENTS)

LTV	THV	RTV	PHF	LTFR	THFR	RTFR
90	554	50	.870	103	637	57
70	977	32	.870	80	1123	37
59	502	18	.870	68	577	21
72	735	12	.970	83	845	14

T 2 (LANE GROUP ADJUSTMENTS)

LN GROUP	FLOW	N	LU	v	Plt	Prt
LT-TH-RT	796	3	1.10	877	0.13	0.07
LT-TH-RT	1240	3	1.10	1364	0.08	0.03
LT-TH-RT	656	3	1.10	732	0.10	0.03
LT-TH-RT	941	3	1.10	1036	0.09	0.01

ESSEX ST/SURFACE ARTERY/LINCOLN ST
EXISTING CONDITIONS: AM PEAK HOUR
date: 03-15-1989 time: 11:19:10

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH-RT	1800	3	1.000	0.990	1.000	1.000	0.986	0.900	0.986	0.957	4478
WB	LT-TH-RT	1800	3	1.000	0.990	1.000	1.000	0.986	0.900	0.990	0.987	4640
NB	LT-TH-RT	1800	3	0.967	0.990	1.000	1.000	0.972	0.900	0.992	0.875	3926
SB	LT-TH-RT	1800	3	1.000	0.990	1.000	1.000	0.965	0.900	0.998	0.870	4033

SUPPLEMENTAL WORKSHEET FOR LEFT-TURN ADJUSTMENT FACTOR FLT

INPUT VARIABLES

DIR	C	G	N	Vs	Vm	Vlt	Plt	No	Vo	Plto	LGo
SB	98	20	3	941	941	83	0.09	3	666	0.10	0

CALCULATIONS

DIR	Sop	Yo	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
SB	4160	0.160	11.621	0.459	0.445	8.379	0.555	2.279	2.451	0.611	0.870

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH-RT	877	4478	0.20	0.15	585	1.28	*
WB	LT-TH-RT	1364	4640	0.29	0.17	805	1.70	*
NB	LT-TH-RT	732	3926	0.19	0.55	2163	0.34	
SB	LT-TH-RT	1036	4033	0.26	0.20	823	1.26	*

CYCLE= 98.0 LOST=16.0 SUM V/S CRIT= 0.75 TOTAL V/C= 0.89

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH-RT	1.28	*	0.15	98.0	33.22	685	107.10	0.85	119.28	F	43.6	131
WB	LT-TH-RT	1.70	*	0.17	98.0	36.04	805	246.26	0.85	239.95	F	121.4	365
NB	LT-TH-RT	0.34		0.55	98.0	9.23	2163	0.00	0.85	7.84	B	8.1	25
SB	LT-TH-RT	1.26	*	0.20	98.0	31.74	823	98.24	0.85	110.48	F	47.8	144

DIR	STREET	DELAY	LOS
EB	ESSEX ST	119.28	F
WB	LINCOLN ST	239.95	F
NB	SURFACE ARTERY	7.84	B
SB	SURFACE ARTERY	110.48	F

INTERSECTION DELAY =137.72 INTERSECTION LOS=F

for chosen cycle length 80.0
suggested timing phase 1 is 16.8 secs green, 4.0 secs yellow + red clear
suggested timing phase 2 is 22.0 secs green, 4.0 secs yellow + red clear
suggested timing phase 3 is 0.0 secs green, 4.0 secs yellow + red clear
suggested timing phase 4 is 25.2 secs green, 4.0 secs yellow + red clear

SSEX ST/SURFACE ARTERY/LINCOLN ST
XISTING CONDITIONS: PM PEAK HOUR
te: 03-15-1989 Time: 10:57:45

85 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
ST DATA SET NAMES LOADED OR SAVED
LUME=21pm GEOMETRICS=21pm SIGNAL=21pm

CATED IN CBD:Y

OLUME & GEOMETRICS

STREET	VOLUMES LT	TH	RT	TOTAL	# OF LANES LT	TH	RT	LANE WIDTH LT	TH	RT	CROSS WALK
ESSEX ST	132	503	128	863	0	3	0	0.0	12.0	0.0	52
LINCOLN ST	34	407	12	453	0	2	0	0.0	12.0	0.0	30
SURFACE ARTERY	37	579	13	729	0	3	0	0.0	11.0	0.0	56
SURFACE ARTERY	35	1117	7	1159	0	3	0	0.0	12.0	0.0	66

AL VOLUME = 3204

AFFIC & ROADWAY CONDITIONS

GRADE	%HV	ADJ PARK Y/N	MOVES	BUSES	PHF	PEDESTRIANS CROSS	BUT	MIN TIME	ARR TYPE
0.0%	2.0%	N	0	10	.940	15	Y	12.0	3
0.0%	2.0%	Y	10	10	.940	180	Y	12.0	3
0.0%	2.0%	N	0	20	.940	100	Y	15.5	3
0.0%	2.0%	N	0	25	.940	310	Y	15.5	3

IASINGS

EASTBOUND l	t	r	p	WESTBOUND l	t	r	p	NORTHBOUND l	t	r	p	SOUTHBOUND l	t	r	p	GREEN	Y+R	PRE/ACT
*	*	*									*				*	15.0	4	A
			*				*	*	*	*		*	*	*		20.0	4	A
			*				*					*	*	*		30.0	4	A
				*	*	*					*				*	17.0	4	A

LE= 93.0

OLUME ADJUSTMENT WORKSHEET
T 1 (MOVEMENT ADJUSTMENTS)

	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
E	132	503	128	.940	140	641	136
W	34	407	12	.940	36	433	13
N	37	579	13	.940	39	722	14
S	35	1117	7	.940	37	1188	7

T 2 (LANE GROUP ADJUSTMENTS)

D	LN GROUP	FLOW	N	LU	v	Plt	Prt
E	LT-TH-RT	918	3	1.10	1010	0.15	0.15
W	LT-TH-RT	492	2	1.05	506	0.08	0.03
N	LT-TH-RT	776	3	1.10	853	0.05	0.02
S	LT-TH-RT	1233	3	1.10	1356	0.03	0.01

ESSEX ST/SURFACE ARTERY/LINCOLN ST
EXISTING CONDITIONS: PM PEAK HOUR
date: 03-15-1999 time: 10:57:49

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH-RT	1900	3	1.000	0.990	1.000	1.000	0.986	0.900	0.971	0.954	4396
WB	LT-TH-RT	1800	2	1.000	0.990	1.000	0.925	0.979	0.900	0.992	0.985	2838
NB	LT-TH-RT	1800	3	0.967	0.990	1.000	1.000	0.972	0.900	0.996	0.750	3376
SB	LT-TH-RT	1900	3	1.000	0.990	1.000	1.000	0.965	0.900	0.999	0.973	4515

SUPPLEMENTAL WORKSHEET FOR LEFT-TURN ADJUSTMENT FACTOR FLT

INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	No	Vo	Plto	LGo
NB	98	20	3	776	776	39	0.05	3	1233	0.03	0

CALCULATIONS

DIR	Sop	Vo	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
NB	5110	0.241	0.000	0.104	0.502	20.000	0.498	1.983	10.777	0.249	0.750

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH-RT	1010	4396	0.23	0.15	673	1.50	*
WB	LT-TH-RT	506	2838	0.18	0.17	492	1.03	*
NB	LT-TH-RT	853	3376	0.25	0.20	689	1.24	
SB	LT-TH-RT	1356	4515	0.30	0.55	2488	0.55	*

CYCLE= 98.0 LOST=12.0 SUM V/S CRIT= 0.71 TOTAL V/C= 0.81

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH-RT	1.50	*	0.15	98.0	34.68	673	181.14	0.85	183.45	F	71.4	215
WB	LT-TH-RT	1.03	*	0.17	98.0	30.96	492	37.19	0.85	57.93	E	15.5	47
NB	LT-TH-RT	1.24		0.20	98.0	31.57	689	93.34	0.85	106.17	F	38.1	115
SB	LT-TH-RT	0.55	*	0.55	98.0	10.73	2488	0.11	0.85	9.21	B	15.1	46

DIR	STREET	DELAY	LOS
EB	ESSEX ST	183.45	F
WB	LINCOLN ST	57.93	E
NB	SURFACE ARTERY	106.17	F
SB	SURFACE ARTERY	9.21	B

INTERSECTION DELAY = 85.27 INTERSECTION LOS=F

for chosen cycle length 80.0
suggested timing phase 1 is 22.1 secs green, 4.0 secs yellow + red clear
suggested timing phase 2 is 24.1 secs green, 4.0 secs yellow + red clear
suggested timing phase 3 is 0.7 secs green, 4.0 secs yellow + red clear
suggested timing phase 4 is 17.1 secs green, 4.0 secs yellow + red clear

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:03-07-1989 TIME:14:38:01
BEACH/HARRISON - EXISTING AM

LAST DATASETS LOADED OR SAVED
VOLUME=12AM GEOMETRICS=12

```
KEY:   D
       |
     A- -B
       |
       C
```

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS: FROM C: STOP
FROM D: YIELD
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 4 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: NO
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH: C: BEACH WB
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH: D: BEACH EB
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: HARRISON NB	B: HARRISON SB	C: BEACH WB	D: BEACH EB
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A: HARRISON NB			B: HARRISON SB			C: BEACH WB			D: BEACH EB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	0	0	1	0	177	118	159	86	0	0	0	1
PHF	0.38			0.88			0.88			0.88		
ADJ VOLUME	0	0	1	0	201	134	192	98	0	0	0	1
PERCENT GRADE	0.00			0.00			0.00					
PASS CAR/HR	0			0			211	108	0	0	0	1

STEP 1 RIGHT TURNS FROM	C:BEACH WB	D:BEACH EB
CONFLICTING FLOWS	1	168
CRITICAL GAPS	5.0	4.5
CAPACITY	1199	1128
CAPACITY USED	0%	0%
IMPEDANCE FACTOR	1.00	1.00
ACTUAL CAPACITY	1199	1128

1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:03-07-1989 TIME:14:38:01
BEACH/HARRISON - EXISTING AM

STEP 2 LEFT TURNS FROM	B:HARRISON SB	A:HARRISON NB
CONFLICTING FLOWS	1	335
CRITICAL GAPS	5.5	5.5
CAPACITY	1106	761
CAPACITY USED	0%	0%
IMPEDANCE FACTOR	1.00	1.00
ACTUAL CAPACITY	1106	761

STEP 3 THRU MOVES FROM	C:BEACH WB	D:BEACH EB
CONFLICTING FLOWS	336	269
CRITICAL GAPS	6.5	6.0
CAPACITY	613	741
CAPACITY USED	18%	0%
IMPEDANCE FACTOR	0.88	1.00
ACTUAL CAPACITY	613	741

STEP 4 LEFT TURNS FROM	C:BEACH WB	D:BEACH EB
CONFLICTING FLOWS	337	367
CRITICAL GAPS	7.0	6.5
CAPACITY	554	587
ACTUAL CAPACITY	554	517

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
ALL MOVES FROM C:	319	573	254	C	14.18	1.26
ALL MOVES FROM D:	1	1128	1127	A	3.20	0.00

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:03-07-1989 TIME:14:40:26
BEACH/HARRISON - EXISTING PM

LAST DATASETS LOADED OR SAVED
VOLUME=12PM GEOMETRICS=12

```
KEY:   D
       |
     A- -B
       |
       C
```

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS: FROM C: STOP
FROM D: YIELD
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 4 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: NO
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH: C: BEACH WB
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH: D: BEACH EB
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: HARRISON NB	B: HARRISON SB	C: BEACH WB	D: BEACH EB
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A: HARRISON NB			B: HARRISON SB			C: BEACH WB			D: BEACH EB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	0	0	1	0	319	103	220	111	0	0	0	1
PHF	0.92			0.92			0.92			0.92		
ADJ VOLUME	0	0	1	0	347	112	239	121	0	0	0	1
PERCENT GRADE	0.00			0.00			0.00					
PASS CAR/HR	0			0			263	133	0	0	0	1

STEP 1 RIGHT TURNS FROM	C:BEACH WB	D:BEACH EB
CONFLICTING FLOWS	1	229
CRITICAL GAPS	5.0	4.5
CAPACITY	1199	1066
CAPACITY USED	0%	0%
IMPEDANCE FACTOR	1.00	1.00
ACTUAL CAPACITY	1199	1066

1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:03-07-1989 TIME:14:40:26
BEACH/HARRISON - EXISTING PM

STEP 2 LEFT TURNS FROM	B:HARRISON SB	A:HARRISON NB
CONFLICTING FLOWS	1	459
CRITICAL GAPS	5.5	5.5
CAPACITY	1106	657
CAPACITY USED	0%	0%
IMPEDANCE FACTOR	1.00	1.00
ACTUAL CAPACITY	1106	657

STEP 3 THRU MOVES FROM	C:BEACH WB	D:BEACH EB
CONFLICTING FLOWS	459	404
CRITICAL GAPS	6.5	6.0
CAPACITY	516	624
CAPACITY USED	26%	0%
IMPEDANCE FACTOR	0.81	1.00
ACTUAL CAPACITY	516	624

STEP 4 LEFT TURNS FROM	C:BEACH WB	D:BEACH EB
CONFLICTING FLOWS	460	524
CRITICAL GAPS	7.0	6.5
CAPACITY	460	470
ACTUAL CAPACITY	460	381

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
ALL MOVES FROM C:	396	477	81	E	44.24	4.86
~~ALL MOVES FROM D:~~	~~1~~	~~1066~~	~~1065~~	~~A~~	~~3.38~~	~~0.00~~

#13

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:03-07-1989 TIME:14:14:16
ESSEX/HARRISON EXISTING CONDITIONS: AM PEAK HOUR

LAST DATASETS LOADED OR SAVED
VOLUME=13AM GEOMETRICS=13

```
KEY:   D
       |
     A- -E
       |
       C
```

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS: FROM C: YIELD
FROM D: STOP
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 2 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: YES
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH: C: HARRISON NB
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH: D: HARRISON SB
EXCLUSIVE LEFT TURN LANES: YES
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: ESSEX EB	B: ESSEX WB	C: HARRISON NB	D: HARRISON SB
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A: ESSEX EB			B: ESSEX WB			C: HARRISON NB			D: HARRISON SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	231	519	213	0	0	1	0	0	1	85	82	0
PHF	0.91			0.91			0.91			0.91		
ADJ VOLUME	254	570	234	0	0	1	0	0	1	93	90	0
PERCENT GRADE	0.00			0.00			0.00					
PASS CAR/HR	279			0			0	0	1	103	99	0

STEP 1 RIGHT TURNS FROM	C:HARRISON NB	D:HARRISON SB
CONFLICTING FLOWS	285	1
CRITICAL GAPS	4.5	5.0
CAPACITY	1012	1199
CAPACITY USED	0%	0%
IMPEDANCE FACTOR	1.00	1.00
ACTUAL CAPACITY	1012	1199

1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:03-07-1989 TIME:14:14:16
ESSEX/HARRISON EXISTING CONDITIONS: AM PEAK HOUR

STEP 2 LEFT TURNS FROM	B:ESSEX WB	A:ESSEX EB
CONFLICTING FLOWS	570	1
CRITICAL GAPS	5.0	5.0
CAPACITY	661	1199
CAPACITY USED	0%	23%
IMPEDANCE FACTOR	1.00	0.83
ACTUAL CAPACITY	661	1199

STEP 3 THRU MOVES FROM	C:HARRISON NB	D:HARRISON SB
CONFLICTING FLOWS	825	825
CRITICAL GAPS	5.5	6.0
CAPACITY	415	353
CAPACITY USED	0%	28%
IMPEDANCE FACTOR	1.00	0.79
ACTUAL CAPACITY	345	293

STEP 4 LEFT TURNS FROM	C:HARRISON NB	D:HARRISON SB
CONFLICTING FLOWS	915	826
CRITICAL GAPS	6.0	6.5
CAPACITY	310	300
ACTUAL CAPACITY	203	249

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM A:	279	1199	920	A	3.91	0.30
~~ALL MOVES FROM C:~~	~~1~~	~~1012~~	~~1011~~	~~A~~	~~3.56~~	~~0.00~~
LT FROM D:	103	249	147	D	24.53	0.70
SHARED TH,RT FROM D:	99	293	194	D	18.57	0.51

NCH PROGRAM VERSION DATE 4-29-1989
35 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
TE:03-15-1989 TIME:15:59:33
SEX'HARRISON EXISTING CONDITIONS PM PEAK HOUR

ST DATASETS LOADED OR SAVED
LUME=13PM GEOMETRICS=13

```
Y.   D
     |
   A- -B
     |
     C
```

ERAL CHARACTERISTICS
ULATION GREATER THAN 250,000: YES
TROLS: FROM C: YIELD
FROM D: STOP
VAILING SPEED: 30 MPH
N STREET # OF LANES: 2 LANES
N STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: YES
N STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

OR STREET LANES

ROACH: C: HARRISON NB
LUSIVE LEFT TURN LANES: NO
LUSIVE RIGHT TURN LANES: NO
GE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
HT TURN ACCELERATION LANE ON MAJOR: NO

ROACH: D: HARRISON SB
LUSIVE LEFT TURN LANES: YES
LUSIVE RIGHT TURN LANES: NO
GE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
HT TURN ACCELERATION LANE ON MAJOR: NO

HT DISTANCE RESTRICTIONS (in seconds)

ROACH	A: ESSEX EB	B: ESSEX WB	C: HARRISON NB	D: HARRISON SB
TS	0.00	0.00	0.00	0.00
US	0.00	0.00	0.00	0.00
HTS	0.00	0.00	0.00	0.00

ROACH	A: ESSEX EB			B: ESSEX WB			C: HARRISON NB			D: HARRISON SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
LUME	256	988	122	0	0	1	0	0	1	158	200	0
	0.94			0.94			0.94			0.94		
VOLUME	272	700	238	0	0	1	0	0	1	188	213	0
RCENT GRADE	0.00			0.00			0.00					
PS CAR/HR	200			0			0	0	1	185	234	0

EP : RIGHT TURNS FROM	C:HARRISON NB	D:HARRISON SB
PLICTING FLOWS	350	1
TICAL GAPS	4.5	5.0
ACITY	951	1199
PACITY USED	0%	0%
PEDANCE FACTOR	1.00	1.00
TUAL CAPACITY	951	1199

1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:03-15-1989 TIME:15:59:33
ESSEX/HARRISON EXISTING CONDITIONS PM PEAK HOUR

STEP 2 LEFT TURNS FROM	B:ESSEX WB	A:ESSEX EB
CONFLICTING FLOWS	700	1
CRITICAL GAPS	5.0	5.0
CAPACITY	570	1199
CAPACITY USED	0%	25%
IMPEDANCE FACTOR	1.00	0.82
ACTUAL CAPACITY	570	1199

STEP 3 THRU MOVES FROM	C:HARRISON NB	D:HARRISON SB
CONFLICTING FLOWS	973	973
CRITICAL GAPS	5.5	6.0
CAPACITY	341	295
CAPACITY USED	0%	82%
IMPEDANCE FACTOR	1.00	0.23
ACTUAL CAPACITY	278	232

STEP 4 LEFT TURNS FROM	C:HARRISON NB	D:HARRISON SB
CONFLICTING FLOWS	1186	974
CRITICAL GAPS	6.0	6.5
CAPACITY	205	238
ACTUAL CAPACITY	38	194

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM A:	300	1199	899	A	4.00	0.33
ALL MOVES FROM C:	1	951	950	A	3.79	0.00
LT FROM D:	195	194	10	E	377.33	19.38
SHARED TH/RT FROM D:	234	232	-2	F	INFINITE	INFINITE

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:03-07-1989 TIME:15:33:53
ESSEX/HARRISON - EXISTING SATURDAY

LAST DATASETS LOADED OR SAVED
VOLUME=13SAT GEOMETRICS=13

```
KEY:   D
       |
     A- -B
       |
       C
```

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS: FROM C: YIELD
FROM D: STOP
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 2 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: YES
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH: C: HARRISON NB
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH: D: HARRISON SB
EXCLUSIVE LEFT TURN LANES: YES
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: ESSEX EB	B: ESSEX WB	C: HARRISON NB	D: HARRISON SB
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A: ESSEX EB			B: ESSEX WB			C: HARRISON NB			D: HARRISON SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	170	455	160	0	0	1	0	0	1	240	114	0
PHF	0.87			0.91			0.87			0.87		
ADJ VOLUME	195	523	184	0	0	1	0	0	1	276	131	0
PERCENT GRADE	0.00			0.00			0.00					
PASS CAP/HR	215			0			0	0	1	303	144	0

STEP 1 RIGHT TURNS FROM	C:HARRISON NB	D:HARRISON SB
CONFLICTING FLOWS	261	1
CRITICAL GAPS	4.5	5.0
CAPACITY	1034	1199
CAPACITY USED	0%	0%
IMPEDANCE FACTOR	1.00	1.00
ACTUAL CAPACITY	1034	1199

1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:03-07-1989 TIME:15:33:53
ESSEX/HARRISON - EXISTING SATURDAY

STEP 2 LEFT TURNS FROM	B:ESSEX WB	A:ESSEX EB
CONFLICTING FLOWS	523	1
CRITICAL GAPS	5.0	5.0
CAPACITY	696	1199
CAPACITY USED	0%	18%
IMPEDANCE FACTOR	1.00	0.88
ACTUAL CAPACITY	696	1199

STEP 3 THRU MOVES FROM	C:HARRISON NB	D:HARRISON SB
CONFLICTING FLOWS	719	719
CRITICAL GAPS	5.5	6.0
CAPACITY	476	409
CAPACITY USED	0%	35%
IMPEDANCE FACTOR	1.00	0.72
ACTUAL CAPACITY	417	359

STEP 4 LEFT TURNS FROM	C:HARRISON NB	D:HARRISON SB
CONFLICTING FLOWS	851	720
CRITICAL GAPS	6.0	6.5
CAPACITY	340	353
ACTUAL CAPACITY	215	309

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM A:	215	1199	984	A	3.66	0.22
ALL MOVES FROM C:	1	1034	1033	A	3.48	0.00
LT FROM D:	303	309	6	E	644.08	54.29
SHARED TH/RT FROM D:	144	359	215	C	16.78	0.67

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:03-07-1989 TIME:15:43:58
HARRISON ST/AVE DE LAF/GARAGE - EXISTING AM PEAK HOUR

LAST DATASETS LOADED OR SAVED
VOLUME=14AM GEOMETRICS=14

```
KEY:   D
       |
     A- -B
       |
       C
```

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS: FROM C: YIELD
FROM D: STOP
FROM D RT LANE: STOP
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 4 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: NO
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH: C: HARRISON NB
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH: D: GARAGE
EXCLUSIVE LEFT TURN LANES: YES
EXCLUSIVE RIGHT TURN LANES: YES
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: AVE DE LAFA	B: AVE DE LAFA	C: HARRISON NB	D: GARAGE
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A: AVE DE LAFA			B: AVE DE LAFA			C: HARRISON NB			D: GARAGE		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	148	0	49	73	73	50	0	0	1	0	6	2
PHF	0.85			0.85			0.87			0.85		
ADJ VOLUME	174	0	56	86	86	59	0	0	1	0	7	2
PERCENT GRADE	0.00			0.00			0.00					
PERCENT CYCLES	0.00			0.00			0.00			0.00		
PASSENGER CARS	0.00			0.00			0.00			%100.00		
PERCENT LT TRU	0.00			0.00			0.00			0.00		
PERCENT HV TRU	0.00			0.00			0.00			0.00		
PASS CAR/HR	192			94			0	0	1	0	7	2

STEP 1 RIGHT TURNS FROM	C:HARRISON NB	D:GARAGE
CONFLICTING FLOWS	28	72
CRITICAL GAPS	4.5	5.0
CAPACITY	1277	1118
CAPACITY USED	0%	0%
IMPEDANCE FACTOR	1.00	1.00
ACTUAL CAPACITY	1277	1118

1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:03-07-1989 TIME:15:43:58
HARRISON ST/AVE DE LAF/GARAGE - EXISTING AM PEAK HOUR

STEP 2 LEFT TURNS FROM	B:AVE DE LAFAYET	A:AVE DE LAFAYET
CONFLICTING FLOWS	56	145
CRITICAL GAPS	5.5	5.5
CAPACITY	1042	945
CAPACITY USED	9%	20%
IMPEDANCE FACTOR	0.95	0.86
ACTUAL CAPACITY	1042	945

STEP 3 THRU MOVES FROM	C:HARRISON NB	D:GARAGE
CONFLICTING FLOWS	433	432
CRITICAL GAPS	6.0	6.5
CAPACITY	601	536
CAPACITY USED	0%	1%
IMPEDANCE FACTOR	1.00	0.99
ACTUAL CAPACITY	487	435

STEP 4 LEFT TURNS FROM	C:HARRISON NB	D:GARAGE
CONFLICTING FLOWS	442	433
CRITICAL GAPS	6.5	7.0
CAPACITY	528	479
ACTUAL CAPACITY	426	389

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM A:	192	945	754	A	4.78	0.25
LT FROM B:	94	1042	947	A	3.80	0.10
ALL MOVES FROM C:	1	1277	1276	A	2.82	0.00
TH FROM D:	7	435	428	A	8.41	0.02
RT FROM D:	2	1118	1115	A	3.23	0.00

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:03-07-1989 TIME:15:46:24
HARRISON ST/AVE DE LAF/GARAGE - EXISTING PM PEAK HOUR

LAST DATASETS LOADED OR SAVED
VOLUME=14PM GEOMETRICS=14

```
KEY:   D
       |
     A- -B
       |
       C
```

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS: FROM C: YIELD
FROM D: STOP
FROM D RT LANE: STOP
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 4 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: NO
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH: C: HARRISON NB
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH: D: GARAGE
EXCLUSIVE LEFT TURN LANES: YES
EXCLUSIVE RIGHT TURN LANES: YES
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: AVE DE LAFA	B: AVE DE LAFA	C: HARRISON NB	D: GARAGE
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A: AVE DE LAFA			B: AVE DE LAFA			C: HARRISON NB			D: GARAGE		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	49	0	83	117	147	10	0	0	1	0	85	22
PHF	0.95			0.95			0.87			0.85		
ADJ VOLUME	52	0	87	123	155	11	0	0	1	0	100	26
PERCENT GRADE	0.00			0.00			0.00					
PERCENT CYCLES	0.00			0.00			0.00			0.00		
PASSENGER CARS	0.00			0.00			0.00			%100.00		
PERCENT LT TRU	0.00			0.00			0.00			0.00		
PERCENT HV TRU	0.00			0.00			0.00			0.00		
PASS CAR/HR	57			135			0	0	1	0	100	26

STEP 1 RIGHT TURNS FROM	C:HARRISON NB	D:GARAGE
CONFLICTING FLOWS	44	83
CRITICAL GAPS	4.5	5.0
CAPACITY	1260	1106
CAPACITY USED	0%	2%
IMPEDANCE FACTOR	1.00	0.99

1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:03-07-1989 TIME:15:46:24
HARRISON ST/AVE DE LAF/GARAGE - EXISTING PM PEAK HOUR

STEP 2 LEFT TURNS FROM	B:AVE DE LAFAYET	A:AVE DE LAFAYET
CONFLICTING FLOWS	87	165
CRITICAL GAPS	5.5	5.5
CAPACITY	1007	924
CAPACITY USED	13%	6%
IMPEDANCE FACTOR	0.91	0.97
ACTUAL CAPACITY	1007	924

STEP 3 THRU MOVES FROM	C:HARRISON NB	D:GARAGE
CONFLICTING FLOWS	384	422
CRITICAL GAPS	6.0	6.5
CAPACITY	641	544
CAPACITY USED	0%	18%
IMPEDANCE FACTOR	1.00	0.87
ACTUAL CAPACITY	565	480

STEP 4 LEFT TURNS FROM	C:HARRISON NB	D:GARAGE
CONFLICTING FLOWS	510	423
CRITICAL GAPS	6.5	7.0
CAPACITY	480	497
ACTUAL CAPACITY	366	429

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM A:	57	924	867	A	4.15	0.07
LT FROM B:	135	1007	872	A	4.13	0.16
ALL MOVES FROM C:	1	1260	1259	A	2.86	0.00
TH FROM D:	100	480	380	B	9.48	0.26
RT FROM D:	26	1106	1081	A	3.33	0.02

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:03-07-1989 TIME:15:50:20
HARRISON ST/AVE DE LAF/GAFAGE - EXISTING SATURDAY

LAST DATASETS LOADED OR SAVED
VOLUME=14SAT GEOMETRICS=14

```
KEY:   D
       |
     A- -B
       |
       C
```

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS: FROM C: YIELD
FROM D: STOP
FROM D RT LANE: STOP
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 4 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: NO
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH: C: HARRISON NB
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH: D: GARAGE
EXCLUSIVE LEFT TURN LANES: YES
EXCLUSIVE RIGHT TURN LANES: YES
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: AVE DE LAFA	B: AVE DE LAFA	C: HARRISON NB	D: GARAGE
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A: AVE DE LAFA			B: AVE DE LAFA			C: HARRISON NB			D: GARAGE		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	59	0	169	136	126	24	0	0	1	0	28	19
PHF	0.87			0.87			0.87			0.87		
ADJ VOLUME	68	0	194	156	145	28	0	0	1	0	32	22
PERCENT GRADE	0.00			0.00			0.00					
PERCENT CYCLES	0.00			0.00			0.00			0.00		
PASSENGER CARS	0.00			0.00			0.00			%100.00		
PERCENT LT TRU	0.00			0.00			0.00			0.00		
PERCENT HV TRU	0.00			0.00			0.00			0.00		
PASS CAR/HR	75			172			0	0	1	0	32	22

STEP 1 RIGHT TURNS FROM	C:HARRISON NB	D:GARAGE
CONFLICTING FLOWS	97	86
CRITICAL GAPS	4.5	5.0
CAPACITY	1202	1102
CAPACITY USED	0%	2%
IMPEDANCE FACTOR	1.00	0.99

1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:03-07-1989 TIME:15:50:20
HARRISON ST/AVE DE LAF/GAFAGE - EXISTING SATURDAY

STEP 2 LEFT TURNS FROM	B:AVE DE LAFAYET	A:AVE DE LAFAYET
CONFLICTING FLOWS	194	172
CRITICAL GAPS	5.5	5.5
CAPACITY	894	916
CAPACITY USED	19%	8%
IMPEDANCE FACTOR	0.87	0.95
ACTUAL CAPACITY	894	916

STEP 3 THRU MOVES FROM	C:HARRISON NB	D:GARAGE
CONFLICTING FLOWS	494	577
CRITICAL GAPS	6.0	6.5
CAPACITY	555	436
CAPACITY USED	0%	7%
IMPEDANCE FACTOR	1.00	0.96
ACTUAL CAPACITY	458	359

STEP 4 LEFT TURNS FROM	C:HARRISON NB	D:GARAGE
CONFLICTING FLOWS	548	578
CRITICAL GAPS	6.5	7.0
CAPACITY	455	383
ACTUAL CAPACITY	356	316

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM A:	75	916	842	A	4.28	0.09
LT FROM B:	172	894	722	A	4.98	0.24
ALL MOVES FROM C:	1	1202	1201	A	3.00	0.00
TH FROM D:	32	359	327	B	11.01	0.10
RT FROM D:	22	1102	1081	A	3.33	0.02

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:03-07-1989 TIME:14:51:05
BEDFORD/CHAUNCY/GARAGE - EXISTING AM PEAK HOUR

LAST DATASETS LOADED OR SAVED
VOLUME=1SAM GEOMETRICS=16

```
KEY:   D
       |
     A- -B
       |
       C
```

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS: FROM C: STOP
FROM D: STOP
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 2 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: YES
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH: C: BEDFORD STREET
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH: D: GARAGE
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: CHAUNCY ST	B: CHAUNCY ST	C: BEDFORD STR	D: GARAGE
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A: CHAUNCY ST			B: CHAUNCY ST			C: BEDFORD STR			D: GARAGE		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	17	172	66	0	1	0	163	124	95	16	17	0
PHF	0.92			0.92			0.92			0.92		
ADJ VOLUME	18	187	72	0	1	0	177	135	103	17	18	0
PERCENT GRADE	0.00			0.00			0.00					
PERCENT CYCLES	0.00			0.00			0.00			0.00		
PASSENGER CARS	0.00			0.00			0.00			%100.00		
PERCENT LT TRU	0.00			0.00			0.00			0.00		
PERCENT HV TRU	0.00			0.00			0.00			0.00		
PASS CAR/HR	20			0			195	148	114	17	18	0

STEP 1 RIGHT TURNS FROM	C:BEDFORD STREET	D:GARAGE
CONFLICTING FLOWS	93	1
CRITICAL GAPS	5.0	5.0
CAPACITY	1095	1199
CAPACITY USED	10%	0%
IMPEDANCE FACTOR	0.94	1.00
ACTUAL CAPACITY	1095	1199

1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:03-07-1989 TIME:14:51:05
BEDFORD/CHAUNCY/GARAGE - EXISTING AM PEAK HOUR

STEP 2 LEFT TURNS FROM	B:CHAUNCY ST SB	A:CHAUNCY ST NB
CONFLICTING FLOWS	187	1
CRITICAL GAPS	5.0	5.0
CAPACITY	996	1199
CAPACITY USED	0%	2%
IMPEDANCE FACTOR	1.00	0.99
ACTUAL CAPACITY	996	1199

STEP 3 THRU MOVES FROM	C:BEDFORD STREET	D:GARAGE
CONFLICTING FLOWS	207	207
CRITICAL GAPS	6.0	6.0
CAPACITY	801	801
CAPACITY USED	19%	2%
IMPEDANCE FACTOR	0.87	0.99
ACTUAL CAPACITY	795	795

STEP 4 LEFT TURNS FROM	C:BEDFORD STREET	D:GARAGE
CONFLICTING FLOWS	225	445
CRITICAL GAPS	6.5	6.5
CAPACITY	714	527
ACTUAL CAPACITY	701	427

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM A:	20	1199	1178	A	3.06	0.02
ALL MOVES FROM C:	457	804	347	B	10.37	1.32
ALL MOVES FROM D:	36	561	525	A	6.86	0.07

CINCH PROGRAM VERSION DATE 4-29-1983
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:03-07-1989 TIME:14:52:58
BEDFORD/CHAUNCY/GARAGE - EXISTING PM PEAK HOUR

LAST DATASETS LOADED OR SAVED
VOLUME=16PM GEOMETRICS=16

```
KEY:   D
       |
     A- -B
       |
       C
```

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS: FROM C: STOP
FROM D: STOP
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 2 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: YES
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH: C: BEDFORD STREET
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH: D: GARAGE
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: CHAUNCY ST	B: CHAUNCY ST	C: BEDFORD STR	D: GARAGE
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A: CHAUNCY ST			B: CHAUNCY ST			C: BEDFORD STR			D: GARAGE		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	15	237	49	0	1	0	180	80	50	50	109	43
PHF	0.92			0.92			0.92			0.92		
ADJ VOLUME	16	258	53	0	1	0	196	87	54	54	118	47
PERCENT GRADE	0.00			0.00			0.00					
PERCENT CYCLES	0.00			0.00			0.00			0.00		
PASSENGER CARS	0.00			0.00			0.00			%100.00		
PERCENT LT TRU	0.00			0.00			0.00			0.00		
PERCENT HV TRU	0.00			0.00			0.00			0.00		
PASS CAR/HR	18			0			215	96	50	54	118	47

STEP 1 RIGHT TURNS FROM	C:BEDFORD STREET	D:GARAGE
CONFLICTING FLOWS	129	1
CRITICAL GAPS	5.0	5.0
CAPACITY	1056	1199
CAPACITY USED	6%	4%
IMPEDANCE FACTOR	0.97	0.98
ACTUAL CAPACITY	1056	1199

1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:03-07-1989 TIME:14:52:58
BEDFORD/CHAUNCY/GARAGE - EXISTING PM PEAK HOUR

STEP 2 LEFT TURNS FROM	B:CHAUNCY ST SB	A:CHAUNCY ST NB
CONFLICTING FLOWS	258	1
CRITICAL GAPS	5.0	5.0
CAPACITY	926	1199
CAPACITY USED	0%	1%
IMPEDANCE FACTOR	1.00	0.99
ACTUAL CAPACITY	926	1199

STEP 3 THRU MOVES FROM	C:BEDFORD STREET	D:GARAGE
CONFLICTING FLOWS	275	275
CRITICAL GAPS	6.0	6.0
CAPACITY	736	736
CAPACITY USED	13%	16%
IMPEDANCE FACTOR	0.92	0.89
ACTUAL CAPACITY	731	731

STEP 4 LEFT TURNS FROM	C:BEDFORD STREET	D:GARAGE
CONFLICTING FLOWS	440	416
CRITICAL GAPS	6.5	6.5
CAPACITY	530	548
ACTUAL CAPACITY	461	484

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM A:	18	1199	1181	A	3.05	0.02
ALL MOVES FROM C:	371	566	195	D	18.41	1.90
ALL MOVES FROM D:	220	701	481	A	7.48	0.46

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:03-07-1999 TIME:17:02:02
KINGSTON/ESSEX/AVE DE LAFAYETTE EXISTING CONDITIONS: AM PEAK HOUR

LAST DATASETS LOADED OR SAVED
VOLUME=18am GEOMETRICS=18

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KEY:   D
       |
     A- -B
       |
       C
```

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS: FROM C: STOP
FROM D: STOP
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 2 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: NO
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH: C: KINGSTON NB
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH: D: KINGSTON SB
EXCLUSIVE LEFT TURN LANES: YES
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: ESSEX EB	B: ESSEX WB	C: KINGSTON NB	D: KINGSTON SB
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A: ESSEX EB			B: ESSEX WB			C: KINGSTON NB			D: KINGSTON SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	0	555	25	0	0	1	0	0	1	218	93	24
PHF	0.94			0.94			0.94			0.94		
ADJ VOLUME	0	590	27	0	0	1	0	0	1	232	99	26
PERCENT GRADE	0.00			0.00			0.00					
PASS CAR/HR	0			0			0	0	1	255	109	28

STEP 1 RIGHT TURNS FROM	C:KINGSTON NB	D:KINGSTON SB
CONFLICTING FLOWS	604	1
CRITICAL GAPS	5.0	5.0
CAPACITY	636	1199
CAPACITY USED	0%	2%
IMPEDANCE FACTOR	1.00	0.99
ACTUAL CAPACITY	636	1199

1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:03-07-1989 TIME:17:02:02
KINGSTON/ESSEX/AVE DE LAFAYETTE EXISTING CONDITIONS: AM PEAK HOUR

STEP 2 LEFT TURNS FROM	B:ESSEX WB	A:ESSEX EB
CONFLICTING FLOWS	617	1
CRITICAL GAPS	5.0	5.0
CAPACITY	627	1199
CAPACITY USED	0%	0%
IMPEDANCE FACTOR	1.00	1.00
ACTUAL CAPACITY	627	1199

STEP 3 THRU MOVES FROM	C:KINGSTON NB	D:KINGSTON SB
CONFLICTING FLOWS	605	618
CRITICAL GAPS	6.0	6.0
CAPACITY	478	470
CAPACITY USED	0%	23%
IMPEDANCE FACTOR	1.00	0.83
ACTUAL CAPACITY	478	470

STEP 4 LEFT TURNS FROM	C:KINGSTON NB	D:KINGSTON SB
CONFLICTING FLOWS	729	619
CRITICAL GAPS	6.5	6.5
CAPACITY	348	410
ACTUAL CAPACITY	286	410

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
ALL MOVES FROM C:	1	636	635	A	5.67	0.00
LT FROM D:	255	410	155	D	23.29	1.65
SHARED TH/RT FROM D:	137	537	400	A	9.00	0.34

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:03-07-1989 TIME:17:07:36
KINGSTON/ESSEX/AVE DE LAFAYETTE EXISTING CONDITIONS: PM PEAK HOUR

LAST DATASETS LOADED OR SAVED
VOLUME=18pm GEOMETRICS=kbint9p

```
KEY:   D
       |
     A- -B
       |
       C
```

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS: FROM C: STOP
FROM D: STOP
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 2 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: NO
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH: C: KINGSTON NB
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH: D: KINGSTON SB
EXCLUSIVE LEFT TURN LANES: YES
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: ESSEX EB	B: ESSEX WB	C: KINGSTON NB	D: KINGSTON SB
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A: ESSEX EB			B: ESSEX WB			C: KINGSTON NB			D: KINGSTON SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	0	695	86	0	0	1	0	0	1	360	298	61
PHF	0.94			0.94			0.94			0.94		
ADJ VOLUME	0	739	91	0	0	1	0	0	1	383	317	65
PERCENT GRADE	0.00			0.00			0.00					
PASS CAR/HR	0			0			0	0	1	421	349	71

STEP 1 RIGHT TURNS FROM	C:KINGSTON NB	D:KINGSTON SB
CONFLICTING FLOWS	785	1
CRITICAL GAPS	5.0	5.0
CAPACITY	516	1199
CAPACITY USED	0%	6%
IMPEDANCE FACTOR	1.00	0.97
ACTUAL CAPACITY	516	1199

1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:03-07-1989 TIME:17:07:36
KINGSTON/ESSEX/AVE DE LAFAYETTE EXISTING CONDITIONS: PM PEAK HOUR

STEP 2 LEFT TURNS FROM	B:ESSEX WB	A:ESSEX EB
CONFLICTING FLOWS	831	1
CRITICAL GAPS	5.0	5.0
CAPACITY	488	1199
CAPACITY USED	0%	0%
IMPEDANCE FACTOR	1.00	1.00
ACTUAL CAPACITY	488	1199

STEP 3 THRU MOVES FROM	C:KINGSTON NB	D:KINGSTON SB
CONFLICTING FLOWS	786	831
CRITICAL GAPS	6.0	6.0
CAPACITY	372	349
CAPACITY USED	0%	100%
IMPEDANCE FACTOR	1.00	0.02
ACTUAL CAPACITY	372	349

STEP 4 LEFT TURNS FROM	C:KINGSTON NB	D:KINGSTON SB
CONFLICTING FLOWS	1168	832
CRITICAL GAPS	6.5	6.5
CAPACITY	174	297
ACTUAL CAPACITY	4	297

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
ALL MOVES FROM C:	1	516	514	A	7.00	0.00
LT FROM D:	421	297	-124	F	INFINITE	INFINITE
SHARED TH/RT FROM D:	420	397	-23	F	INFINITE	INFINITE

#19

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:03-07-1989 TIME:14:59:07
KINGSTON/BEDFORD - EXISTING AM

LAST DATASETS LOADED OR SAVED
VOLUME=19AM GEOMETRICS=19

```
KEY:   D
       |
     A- -B
       |
       C
```

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS: FROM C: YIELD
FROM D: STOP
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 2 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: NO
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH: C: KINGSTON NB
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH: D: KINGSTON SB
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: BEDFORD EB	B: BEDFORD WB	C: KINGSTON NB	D: KINGSTON SB
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A: BEDFORD EB			B: BEDFORD WB			C: KINGSTON NB			D: KINGSTON SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	0	0	93	63	293	0	0	1	0	0	189	104
PHF	0.88			0.88			0.88			0.88		
ADJ VOLUME	0	0	94	72	322	0	0	1	0	0	215	118
PERCENT GRADE	0.00			0.00			0.00					
PASS CAR/HR	0			79			0	1	0	0	236	130

STEP 1 RIGHT TURNS FROM	C:KINGSTON NB	D:KINGSTON SB
CONFLICTING FLOWS	47	161
CRITICAL GAPS	4.5	5.0
CAPACITY	1255	1023
CAPACITY USED	0%	13%
IMPEDANCE FACTOR	1.00	0.92
ACTUAL CAPACITY	1256	1023

1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:03-07-1989 TIME:14:59:07
KINGSTON/BEDFORD - EXISTING AM

STEP 2 LEFT TURNS FROM	B:BEDFORD WB	A:BEDFORD EB
CONFLICTING FLOWS	94	322
CRITICAL GAPS	5.0	5.0
CAPACITY	1094	866
CAPACITY USED	7%	0%
IMPEDANCE FACTOR	0.96	1.00
ACTUAL CAPACITY	1094	866

STEP 3 THRU MOVES FROM	C:KINGSTON NB	D:KINGSTON SB
CONFLICTING FLOWS	440	488
CRITICAL GAPS	5.5	6.0
CAPACITY	572	559
CAPACITY USED	0%	42%
IMPEDANCE FACTOR	1.00	0.65
ACTUAL CAPACITY	644	537

STEP 4 LEFT TURNS FROM	C:KINGSTON NB	D:KINGSTON SB
CONFLICTING FLOWS	773	489
CRITICAL GAPS	6.0	6.5
CAPACITY	379	495
ACTUAL CAPACITY	218	474

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM B:	79	1094	1015	A	3.55	0.08
ALL MOVES FROM C:	1	644	643	A	5.60	0.00
ALL MOVES FROM D:	366	645	279	C	12.89	1.31

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:03-07-1988 TIME:15:01:57
KINGSTON/BEDFORD EXISTING CONDITIONS: PM PEAK HOUR

LAST DATASETS LOADED OR SAVED
VOLUME=19PM GEOMETRICS=19

```
KEY:   D
       |
     A- -B
       |
       C
```

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS: FROM C: YIELD
FROM D: STOP
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 2 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: NO
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH: C: KINGSTON NB
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH: D: KINGSTON SB
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: BEDFORD EB	B: BEDFORD WB	C: KINGSTON NB	D: KINGSTON SB
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A: BEDFORD EB			B: BEDFORD WB			C: KINGSTON NB			D: KINGSTON SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	0	0	158	116	160	0	0	1	0	0	350	160
PHF	0.94			0.94			0.94			0.94		
ADJ VOLUME	0	0	168	123	170	0	0	1	0	0	372	170
PERCENT GRADE	0.00			0.00			0.00					
PASS CAR/HR	0			136			0	1	0	0	410	187

STEP 1 RIGHT TURNS FROM	C:KINGSTON NB	D:KINGSTON SB
CONFLICTING FLOWS	84	85
CRITICAL GAPS	4.5	5.0
CAPACITY	1216	1104
CAPACITY USED	0%	17%
IMPEDANCE FACTOR	1.00	0.88
ACTUAL CAPACITY	1216	1104

1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:03-07-1989 TIME:15:01:57
KINGSTON/BEDFORD EXISTING CONDITIONS: PM PEAK HOUR

STEP 2 LEFT TURNS FROM	B:BEDFORD WB	A:BEDFORD EB
CONFLICTING FLOWS	168	170
CRITICAL GAPS	5.0	5.0
CAPACITY	1015	1013
CAPACITY USED	13%	0%
IMPEDANCE FACTOR	0.91	1.00
ACTUAL CAPACITY	1015	1013

STEP 3 THRU MOVES FROM	C:KINGSTON NB	D:KINGSTON SB
CONFLICTING FLOWS	378	462
CRITICAL GAPS	5.5	6.0
CAPACITY	724	579
CAPACITY USED	0%	71%
IMPEDANCE FACTOR	1.00	0.36
ACTUAL CAPACITY	661	529

STEP 4 LEFT TURNS FROM	C:KINGSTON NB	D:KINGSTON SB
CONFLICTING FLOWS	920	463
CRITICAL GAPS	6.0	6.5
CAPACITY	307	513
ACTUAL CAPACITY	88	469

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
L~ FROM E:	136	1015	880	A	4.09	0.15
~~ALL MOVES FROM C:~~	~~1~~	~~661~~	~~660~~	~~A~~	~~5.46~~	~~0.00~~
ALL MOVES FROM D:	597	632	35	E	102.24	16.95

CINCH PROGRAM VERSION DATE 4-29-1989
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:03-09-1989 TIME:15:14:11
KINGSTON/BEDFORD - EXISTING SATURDAY

LAST DATASETS LOADED OR SAVED
VOLUME=19SAT GEOMETRICS=19

```
KEY:   D
       |
     A- -B
       |
       C
```

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS: FROM C: YIELD
FROM D: STOP
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 2 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: NO
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH: C: KINGSTON NB
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH: D: KINGSTON SB
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: BEDFORD EB	B: BEDFORD WB	C: KINGSTON NB	D: KINGSTON SB
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A: BEDFORD EB			B: BEDFORD WB			C: KINGSTON NB			D: KINGSTON SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	0	0	115	142	79	0	0	0	1	0	235	189
PHF	0.92			0.92			0.92			0.92		
ADJ VOLUME	0	0	126	154	86	0	0	0	1	0	255	205
PERCENT GRADE	0.00			0.00			0.00					
PASS CAR/HR	0			170			0	0	1	0	281	226

STEP 1 RIGHT TURNS FROM	C:KINGSTON NB	D:KINGSTON SB
CONFLICTING FLOWS	63	43
CRITICAL GAPS	4.5	5.0
CAPACITY	1239	1151
CAPACITY USED	0%	20%
IMPEDANCE FACTOR	1.00	0.86
ACTUAL CAPACITY	1239	1151

1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:03-07-1989 TIME:15:14:11
KINGSTON/BEDFORD - EXISTING SATURDAY

STEP 2 LEFT TURNS FROM	B:BEDFORD WB	A:BEDFORD EB
CONFLICTING FLOWS	126	86
CRITICAL GAPS	5.0	5.0
CAPACITY	1059	1103
CAPACITY USED	16%	0%
IMPEDANCE FACTOR	0.89	1.00
ACTUAL CAPACITY	1059	1103

STEP 3 THRU MOVES FROM	C:KINGSTON NB	D:KINGSTON SB
CONFLICTING FLOWS	303	366
CRITICAL GAPS	5.5	6.0
CAPACITY	789	655
CAPACITY USED	0%	43%
IMPEDANCE FACTOR	1.00	0.65
ACTUAL CAPACITY	704	585

STEP 4 LEFT TURNS FROM	C:KINGSTON NB	D:KINGSTON SB
CONFLICTING FLOWS	764	367
CRITICAL GAPS	6.0	6.5
CAPACITY	384	587
ACTUAL CAPACITY	191	524

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM B:	170	1059	890	A	4.05	0.19
ALL MOVES FROM C:	1	1239	1238	A	2.91	0.00
ALL MOVES FROM D:	507	749	242	C	14.89	2.10

#22

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10 : UNSIGNALIZED - 3 APPROACHES (PAGE 1 of 2)
DATE:03-07-1989 TIME:15:56:33
HARRISON/HAYWARD - EXISTING AM PEAK

LAST DATASETS LOADED OR SAVED
VOLUME=22AM GEOMETRICS=22
KEY: A- -B
|
C

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS: FROM C: STOP
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 2 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: N

MINOR STREET LANES
APPROACH: C: HAYWARD PL
SHARED LEFT AND RIGHT TURN LANE: YES
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: HAYWARD ST	B: PROXY	C: HAYWARD PL
LEFTS	0.00	0.00	0.00
THRUS	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00

APPROACH	A: HAYWARD ST			B: PROXY			C: HAYWARD PL		
	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	0	121	0	0	1	0	0	0	40
PHF	0.90			0.87			0.90		
ADJ VOLUME	0	134	0	0	1	0	0	0	44
PERCENT GRADE	0.00			0.00			0.00		
PASS CAR/HR	0			0			0	0	49

STEP 1 RIGHT TURNS FROM C:HAYWARD PL

CONFLICTING FLOWS	134
CRITICAL GAPS	5.0
CAPACITY	1051
ACTUAL CAPACITY	1051

STEP 2 LEFT TURNS FROM B:PROXY

CONFLICTING FLOWS	134
CRITICAL GAPS	4.5
CAPACITY	1162
CAPACITY USED	0%
IMPEDANCE FACTOR	1.00
ACTUAL CAPACITY	1162

DATE:03-07-1989 TIME:15:56:33
HARRISON/HAYWARD - EXISTING AM PEAK

STEP 3 LEFT TURNS FROM	C:HAYWARD PL
CONFLICTING FLOWS	136
CRITICAL GAPS	6.0
CAPACITY	874
ACTUAL CAPACITY	874

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
ALL MOVES FROM C:	49	1051	1002	A	3.59	0.05

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10 : UNSIGNALIZED - 3 APPROACHES (PAGE 1 of 2)
DATE:03-07-1989 TIME:15:57:29
HARRISON/HAYWARD - EXISTING PM PEAK

LAST DATASETS LOADED OR SAVED
VOLUME=22PM GEOMETRICS=22
KEY: A- -B
!
C

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS: FROM C: STOP
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 2 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: N

MINOR STREET LANES
APPROACH: C: HAYWARD PL
SHARED LEFT AND RIGHT TURN LANE: YES
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: HAYWARD ST	B: PROXY	C: HAYWARD PL
LEFT	0.00	0.00	0.00
THRU	0.00	0.00	0.00
RIGHT	0.00	0.00	0.00

APPROACH	A: HAYWARD ST			B: PROXY			C: HAYWARD PL		
	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	0	200	0	0	1	0	0	0	75
PHF	0.90			0.87			0.90		
ADJ VOLUME	0	222	0	0	1	0	0	0	83
PERCENT GRADE	0.00			0.00			0.00		
PASS CAR/PF	0			0			0	0	92

STEP 1 RIGHT TURNS FROM C:HAYWARD PL

CONFLICTING FLOWS	222
CRITICAL GAPS	5.0
CAPACITY	961
ACTUAL CAPACITY	961

STEP 2 LEFT TURNS FROM B:PROXY

CONFLICTING FLOWS	222
CRITICAL GAPS	4.5
CAPACITY	1073
CAPACITY USED	0%
IMPEDANCE FACTOR	1.00
ACTUAL CAPACITY	1073

DATE:03-07-1989 TIME:15:57:29
HARRISON/HAYWARD - EXISTING PM PEAK

STEP 3 LEFT TURNS FROM C:HAYWARD PL

CONFLICTING FLOWS	223
CRITICAL GAPS	6.0
CAPACITY	785
ACTUAL CAPACITY	785

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
ALL MOVES FROM C:	92	961	869	A	4.14	0.11

Auto Trips Due to Other Developments

COMMONWEALTH CENTER

Land Use	Daily Trips	AM PEAK HOUR In	AM PEAK HOUR Out	AM PEAK HOUR Total	PM PEAK HOUR In	PM PEAK HOUR Out	PM PEAK HOUR Total
Office							
(1,476,580 GSF)							
Autos	2,353	377	55	432	63	334	397
Walk	752	121	18	139	20	107	127
Bus	4,166	668	98	766	111	591	702
Subway	4,450	713	105	818	118	632	750
Train	852	137	20	157	23	121	144
Subtotal	12,573	2,016	296	2,312	335	1,785	2,120
Retail							
(162,150 GSF)							
Autos	942	18	0	18	72	144	216
Walk	1,598	31	0	31	122	244	366
Bus	766	3	0	3	12	24	36
Subway	819	16	0	16	63	124	187
Train	157	15	0	15	58	116	174
Subtotal	4,282	83	0	83	327	652	979
Hotel							
(291,120 GSF)							
Autos	1,608	108	113	221	170	138	308
Walk	865	58	61	119	91	74	165
Bus	407	6	6	12	41 3	35	78
Subway	435	29	30	59	46	37	83
Train	83	27	28	55	9	7	16
Subtotal	3,398	228	238	466	359	291	650
Theater							
(66,000 GSF)							
Autos	395	15	5	20	28	26	54
Walk	816	32	10	42	57	54	111
Bus	106	4	1	5	7	7	14
Subway	114	4	1	5	8	8	16
Train	22	1	0	1	2	1	3
Subtotal	1,453	56	17	73	102	96	198
TOTAL	21,706	2,383	551	2,934	1,123	2,824	3,947

Kingston Bedford

Land Use	Size	Auto Trips In	Auto Trips Out	Auto Trips Total
Office	965,000 sf			
AM Peak Hour		315	49	363
PM Peak Hour		54	279	333
Average Daily		991	991	1981
Sat Peak Hour		48	40	88
Retail	35,000 sf			
AM Peak Hour		6	2	8
PM Peak Hour		15	17	32
Average Daily		176	176	352
Sat Peak Hour		20	19	40
Hotel	0 Rooms			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Daycare	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour				
Health Club	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Gallery/Museum	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Theatre	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Residential/Condo	0 Units			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Total				
AM Peak Hour		320	51	371
PM Peak Hour		69	296	365
Average Daily		1167	1167	2334
Sat Peak Hour		68	60	128

Commonwealth Center

Land Use	Size	Auto Trips In	Auto Trips Out	Auto Trips Total
Office	1,476,580 sf			
AM Peak Hour		481	75	556
PM Peak Hour		83	427	510
Average Daily		1516	1516	3032
Sat Peak Hour		80	68	147
Retail	162,150 sf			
AM Peak Hour		27	10	36
PM Peak Hour		69	78	147
Average Daily		816	816	1631
Sat Peak Hour		94	90	184
Hotel	414 Rooms			
AM Peak Hour		106	58	164
PM Peak Hour		82	60	141
Average Daily		853	853	1705
Sat Peak Hour		50	39	88
Daycare	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour				
Health Club	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Gallery/Museum	66,000 sf			
AM Peak Hour		1	0	1
PM Peak Hour		20	26	46
Average Daily		130	130	260
Sat Peak Hour		39	52	91
Theatre	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Residential/Condo	0 Units			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Total				
AM Peak Hour		615	142	758
PM Peak Hour		254	591	845
Average Daily		3314	3314	6629
Sat Peak Hour		262	249	511

Redo

COMMONWEALTH CENTER

Land Use	Daily Trips	AM PEAK HOUR In	AM PEAK HOUR Out	AM PEAK HOUR Total	PM PEAK HOUR In	PM PEAK HOUR Out	PM PEAK HOUR Total
Office							
(1,476,580 GSF)							
Autos	2,353	377	55	432	63	334	397
Walk	752	121	18	139	20	107	127
Bus	4,166	668	98	766	111	591	702
Subway	4,450	713	105	818	118	632	750
Train	852	137	20	157	23	121	144
Subtotal	12,573	2,016	296	2,312	335	1,785	2,120
Retail							
(162,150 GSF)							
Autos	942	18	0	18	72	144	216
Walk	1,598	31	0	31	122	244	366
Bus	766	3	0	3	12	24	36
Subway	819	16	0	16	63	124	187
Train	157	15	0	15	58	116	174
Subtotal	4,282	83	0	83	327	652	979
Hotel							
(291,120 GSF)							
Autos	1,608	108	113	221	170	138	308
Walk	865	58	61	119	91	74	165
Bus	407	6	6	12	41 3	35	78
Subway	435	29	30	59	46	37	83
Train	83	27	28	55	9	7	16
Subtotal	3,398	228	238	466	359	291	650
Theater							
(66,000 GSF)							
Autos	395	15	5	20	28	26	54
Walk	816	32	10	42	57	54	111
Bus	106	4	1	5	7	7	14
Subway	114	4	1	5	8	8	16
Train	22	1	0	1	2	1	3
Subtotal	1,453	56	17	73	102	96	198
TOTAL	21,706	2,383	551	2,934	1,123	2,824	3,947

TOTAL

	TOTAL	MODE SPLIT AUTO Persons	AUTO Cars	TRANSIT	WALK/ OTHER	Check
TOTAL ADT:						
Work	6994	2098	1177	4196	699	6994
Non-Work	5389	1482	968	2297	1610	5389
Total	12383	3580	2145	6494	2309	12383
AM PEAK						
In						
Work	1350	405	226	810	135	1350
Non-Work	350	96	68	164	89	350
Total In:	1700	501	294	974	224	1700
Out						
Work	0	0	0	0	0	0
Non-work	253	70	49	118	65	253
Total Out:	253	70	49	118	65	253
Total						
Work	1350	405	226	810	135	1350
Non-work	603	166	117	283	154	603
Total	1953	571	343	1093	289	1953
PM PEAK						
In						
Work	103	31	18	62	10	103
Non-work	240	66	44	104	70	240
Total In	343	97	62	166	80	343
Out						
Work	1293	388	216	776	129	1293
Non-work	297	82	54	130	86	297
Total Out	1590	470	271	906	215	1590
Total						
Work	1396	419	234	838	140	1396
Non-work	537	148	98	234	155	537
Total	1933	566	333	1072	295	1933
SATURDAY TOTAL						
Work	2322	697	401	1393	232	2322
Non-Work	2390	657	357	810	923	2390
Total	4712	1354	758	2203	1155	4712
SATURDAY PEAK						
In						
Work	93	28	16	56	9	93
Non-work	121	33	18	41	47	121
Total In	214	61	34	97	56	214
Out						
Work	83	25	14	50	8	83
Non-work	116	32	17	39	45	116
Total Out	199	57	31	89	53	199
Total						
Work	176	53	30	106	18	176
Non-work	237	65	35	80	92	237
Total	413	118	65	186	109	413

295 Devonshire

Land Use	Size	Auto Trips In	Auto Trips Out	Auto Trips Total
Office	18,530 sf			
AM Peak Hour		10	2	12
PM Peak Hour		2	10	12
Average Daily		49	49	97
Sat Peak Hour		1	1	1
Retail	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Hotel	0 Rooms			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Daycare	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour				
Health Club	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Gallery/Museum	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Theatre	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Residential/Condo	0 Units			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Total				
AM Peak Hour		10	2	12
PM Peak Hour		2	10	12
Average Daily		49	49	97
Sat Peak Hour		1	1	1

Don Bosco

Land Use	Size	Auto Trips In	Auto Trips Out	Auto Trips Total
Office	58,500 sf			
AM Peak Hour		27	4	32
PM Peak Hour		5	26	32
Average Daily		115	115	231
Sat Peak Hour		2	2	5
Retail	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Hotel	203 Rooms			
AM Peak Hour		34	18	52
PM Peak Hour		32	24	56
Average Daily		411	411	822
Sat Peak Hour		34	27	60
Daycare	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour				
Health Club	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Gallery/Museum	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Theatre	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Residential/Condo	98 Units			
AM Peak Hour		2	12	13
PM Peak Hour		12	6	17
Average Daily		96	96	193
Sat Peak Hour		12	6	17
Total				
AM Peak Hour		63	34	97
PM Peak Hour		49	56	105
Average Daily		623	623	1245
Sat Peak Hour		48	34	82

Parcel C - 2

Land Use	Size	Auto Trips In	Auto Trips Out	Auto Trips Total
Office	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Retail	50,000 sf			
AM Peak Hour		8	3	11
PM Peak Hour		21	24	45
Average Daily		252	252	503
Sat Peak Hour		29	28	57
Hotel	0 Rooms			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Daycare	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour				
Health Club	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Gallery/Museum	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Theatre	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Residential/Condo	36 Units			
AM Peak Hour		1	4	5
PM Peak Hour		4	2	6
Average Daily		35	35	71
Sat Peak Hour		4	2	6
Total				
AM Peak Hour		9	7	16
PM Peak Hour		26	26	52
Average Daily		287	287	574
Sat Peak Hour		33	30	63

125 Summer Street

Land Use	Size	Auto Trips In	Auto Trips Out	Auto Trips Total
Office	446,861 sf			
AM Peak Hour		158	24	182
PM Peak Hour		28	143	171
Average Daily		530	530	1061
Sat Peak Hour		20	17	37
Retail	17,100 sf			
AM Peak Hour		3	1	4
PM Peak Hour		7	8	16
Average Daily		86	86	172
Sat Peak Hour		10	10	19
Hotel	0 Rooms			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Daycare	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour				
Health Club	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Gallery/Museum	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Theatre	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Residential/Condo	0 Units			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Total				
AM Peak Hour		161	26	186
PM Peak Hour		35	151	186
Average Daily		616	616	1233
Sat Peak Hour		30	27	57

45 Province Street

Land Use	Size	Auto Trips In	Auto Trips Out	Auto Trips Total
Office	142,890 sf			
AM Peak Hour		59	9	68
PM Peak Hour		11	55	66
Average Daily		226	226	451
Sat Peak Hour		6	5	11
Retail	13,800 sf			
AM Peak Hour		2	1	3
PM Peak Hour		6	7	13
Average Daily		69	69	139
Sat Peak Hour		8	8	16
Hotel	0 Rooms			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Daycare	4,000 sf			
AM Peak Hour		7	6	13
PM Peak Hour		7	7	14
Average Daily		38	38	75
Sat Peak Hour				
Health Club	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Gallery/Museum	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Theatre	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Residential/Condo	0 Units			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Total				
AM Peak Hour		68	16	84
PM Peak Hour		~~17~~ 24	69	~~86~~ 93
Average Daily		333	333	665
Sat Peak Hour		15	13	28

73 Tremont Street

Land Use	Size	Auto Trips In	Auto Trips Out	Auto Trips Total
Office	276,000 sf			
AM Peak Hour		104	16	120
PM Peak Hour		19	96	114
Average Daily		370	370	739
Sat Peak Hour		12	10	23
Retail	20,000 sf			
AM Peak Hour		3	1	4
PM Peak Hour		9	10	18
Average Daily		101	101	201
Sat Peak Hour		12	11	23
Hotel	0 Rooms			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Daycare	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour				
Health Club	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Gallery/Museum	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Theatre	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Residential/Condo	0 Units			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Total				
AM Peak Hour		108	17	125
PM Peak Hour		27	105	133
Average Daily		470	470	940
Sat Peak Hour		24	22	45

146 Boylston Street

Land Use	Size	Auto Trips In	Auto Trips Out	Auto Trips Total
Office	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Retail	18,290 sf			
AM Peak Hour		3	1	4
PM Peak Hour		8	9	17
Average Daily		92	92	184
Sat Peak Hour		11	10	21
Hotel	0 Rooms			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Daycare	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour				
Health Club	1,200 sf			
AM Peak Hour		1	0	1
PM Peak Hour		0	1	1
Average Daily		10	10	20
Sat Peak Hour		0	0	0
Gallery/Museum	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Theatre	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Residential/Condo	39 Units			
AM Peak Hour		1	5	5
PM Peak Hour		5	2	7
Average Daily		38	38	77
Sat Peak Hour		5	2	7
Total				
AM Peak Hour		5	6	11
PM Peak Hour		13	12	25
Average Daily		140	140	280
Sat Peak Hour		15	12	28

Forty Franklin Street

Land Use	Size	Auto Trips In	Auto Trips Out	Auto Trips Total
Office	500,000 sf			
AM Peak Hour		174	27	201
PM Peak Hour		31	157	187
Average Daily		577	577	1154
Sat Peak Hour		23	19	42
Retail	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Hotel	0 Rooms			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Daycare	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour				
Health Club	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Gallery/Museum	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Theatre	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Residential/Condo	0 Units			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Total				
AM Peak Hour		174	27	201
PM Peak Hour		31	157	187
Average Daily		577	577	1154
Sat Peak Hour		23	19	42

64 -74 Franklin Street

Land Use	Size	Auto Trips In	Auto Trips Out	Auto Trips Total
Office	79,000 sf			
AM Peak Hour		36	6	41
PM Peak Hour		7	34	40
Average Daily		145	145	289
Sat Peak Hour		3	3	6
Retail	9,000 sf			
AM Peak Hour		1	1	2
PM Peak Hour		4	4	8
Average Daily		45	45	91
Sat Peak Hour		5	5	10
Hotel	0 Rooms			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Daycare	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour				
Health Club	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Gallery/Museum	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Theatre	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Residential/Condo	0 Units			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Total				
AM Peak Hour		37	6	43
PM Peak Hour		10	38	49
Average Daily		190	190	380
Sat Peak Hour		9	8	16

One Bowdoin Square

Land Use	Size	Auto Trips In	Auto Trips Out	Auto Trips Total
Office	130,914 sf			
AM Peak Hour		55	9	63
PM Peak Hour		10	52	62
Average Daily		211	211	422
Sat Peak Hour		6	5	10
Retail	10,290 sf			
AM Peak Hour		2	1	2
PM Peak Hour		4	5	9
Average Daily		52	52	104
Sat Peak Hour		6	6	12
Hotel	0 Rooms			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Daycare	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour				
Health Club	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Gallery/Museum	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Theatre	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Residential/Condo	0 Units			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Total				
AM Peak Hour		57	9	66
PM Peak Hour		14	56	71
Average Daily		263	263	526
Sat Peak Hour		12	11	22

Parcel R3 - R3A

Land Use	Size	Auto Trips In	Auto Trips Out	Auto Trips Total
Office	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Retail	5,000 sf			
AM Peak Hour		1	0	1
PM Peak Hour		2	2	5
Average Daily		25	25	50
Sat Peak Hour		3	3	6
Hotel	0 Rooms			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Daycare	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour				
Health Club	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Gallery/Museum	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Theatre	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Residential/Condo	261 Units			
AM Peak Hour		5	31	36
PM Peak Hour		31	15	46
Average Daily		256	256	513
Sat Peak Hour		31	15	46
Total				
AM Peak Hour		6	31	37
PM Peak Hour		33	18	51
Average Daily		281	281	563
Sat Peak Hour		34	18	52

90 Tremont Street

Land Use	Size	Auto Trips In	Auto Trips Out	Auto Trips Total
Office	185,500 sf			
AM Peak Hour		74	11	86
PM Peak Hour		13	69	82
Average Daily		274	274	549
Sat Peak Hour		8	7	15
Retail	2,500 sf			
AM Peak Hour		0	0	1
PM Peak Hour		1	1	2
Average Daily		13	13	25
Sat Peak Hour		1	1	3
Hotel	0 Rooms			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Daycare	4,000 sf			
AM Peak Hour		7	6	13
PM Peak Hour		6	7	13
Average Daily		38	38	75
Sat Peak Hour				
Health Club	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Gallery/Museum	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Theatre	46,600 sf			
AM Peak Hour		1	0	1
PM Peak Hour		9	9	19
Average Daily		184	184	368
Sat Peak Hour		28	37	64
Residential/Condo	0 Units			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Total				
AM Peak Hour		82	18	100
PM Peak Hour		~~24~~ 30	87	~~110~~ 117
Average Daily		509	509	1017
Sat Peak Hour		38	45	83

The Parkside Projects

Land Use	Size	Auto Trips In	Auto Trips Out	Auto Trips Total
Office	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Retail	7,386 sf			
AM Peak Hour		1	0	2
PM Peak Hour		3	4	7
Average Daily		37	37	74
Sat Peak Hour		4	4	8
Hotel	0 Rooms			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Daycare	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour				
Health Club	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Gallery/Museum	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Theatre	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Residential/Condo	267 Units			
AM Peak Hour		5	31	37
PM Peak Hour		31	16	47
Average Daily		262	262	524
Sat Peak Hour		31	16	47
Total				
AM Peak Hour		6	32	38
PM Peak Hour		35	19	54
Average Daily		299	299	599
Sat Peak Hour		36	20	56

Pavillion at Park Square

Land Use	Size	Auto Trips In	Auto Trips Out	Auto Trips Total
Office	75,000 sf			
AM Peak Hour		34	5	39
PM Peak Hour		6	32	39
Average Daily		139	139	278
Sat Peak Hour		3	3	6
Retail	25,000 sf			
AM Peak Hour		4	2	6
PM Peak Hour		11	12	23
Average Daily		126	126	252
Sat Peak Hour		14	14	28
Hotel	0 Rooms			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Daycare	1,345 sf			
AM Peak Hour		2	2	4
PM Peak Hour		~~02~~	2	~~24~~
Average Daily		13	13	25
Sat Peak Hour				
Health Club	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Gallery/Museum	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Theatre	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Residential/Condo	110 Units			
AM Peak Hour		2	13	15
PM Peak Hour		13	6	19
Average Daily		108	108	216
Sat Peak Hour		13	6	19
Total				
AM Peak Hour		43	22	64
PM Peak Hour		~~30~~ 32	53	~~83~~ 85
Average Daily		386	386	771
Sat Peak Hour		31	23	54

110 - 120 Tremont Street

Land Use	Size	Auto Trips In	Auto Trips Out	Auto Trips Total
Office	354,923 sf			
AM Peak Hour		130	20	150
PM Peak Hour		23	118	141
Average Daily		446	446	893
Sat Peak Hour		16	14	29
Retail	20,000 sf			
AM Peak Hour		3	1	4
PM Peak Hour		9	10	18
Average Daily		101	101	201
Sat Peak Hour		12	11	23
Hotel	0 Rooms			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Daycare	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour				
Health Club	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Gallery/Museum	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Theatre	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Residential/Condo	0 Units			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Total				
AM Peak Hour		133	21	154
PM Peak Hour		32	128	159
Average Daily		547	547	1094
Sat Peak Hour		27	25	52

Walk and Transit Trips Due to Other Developments

Commonwealth Center

Land Use	Size	Walk Trips In	Walk Trips Out	Walk Trips Total	Transit Trips In	Transit Trips Out	Transit Trips Total
Office	1,476,580 sf						
AM Peak Hour		178	57	235	1615	219	1834
PM Peak Hour		49	147	196	259	1443	1702
Average Daily		676	676	1352	4960	4960	9920
Sat Peak Hour		25	22	47	271	231	503
Retail	162,150 sf						
AM Peak Hour		26	23	49	70	19	89
PM Peak Hour		127	143	269	150	169	318
Average Daily		1650	1650	3300	1678	1678	3355
Sat Peak Hour		206	198	405	184	177	361
Hotel	414 Rooms						
AM Peak Hour		60	34	93	54	20	74
PM Peak Hour		48	34	82	29	28	57
Average Daily		473	473	946	484	484	968
Sat Peak Hour		27	22	49	28	22	50
Daycare	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour							
Health Club	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Gallery/Museum	66,000 sf						
AM Peak Hour		0	0	0	4	0	4
PM Peak Hour		28	50	79	43	45	88
Average Daily		252	252	505	225	225	450
Sat Peak Hour		76	101	177	68	90	158
Theatre	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Residential/Condo	0 Units						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Total							
AM Peak Hour		264	114	377	1743	257	2000
PM Peak Hour		252	374	626	480	1685	2165
Average Daily		3052	3052	6103	7347	7347	14694
Sat Peak Hour		335	342	677	551	520	1072

Kingston Bedford

Land Use	Size	Walk Trips In	Walk Trips Out	Walk Trips Total	Transit Trips In	Transit Trips Out	Transit Trips Total
Office	965,000 sf						
AM Peak Hour		116	37	154	1056	143	1198
PM Peak Hour		32	96	128	169	943	1112
Average Daily		442	442	884	3242	3242	6483
Sat Peak Hour		15	13	28	162	138	300
Retail	35,000 sf						
AM Peak Hour		6	5	10	15	4	19
PM Peak Hour		27	31	58	32	36	69
Average Daily		356	356	712	362	362	724
Sat Peak Hour		45	43	87	40	38	78
Hotel	0 Rooms						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Daycare	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour							
Health Club	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Gallery/Museum	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Theatre	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Residential/Condo	0 Units						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Total							
AM Peak Hour		122	42	164	1071	147	1218
PM Peak Hour		60	127	186	201	980	1181
Average Daily		798	798	1596	3604	3604	7208
Sat Peak Hour		60	56	115	202	176	378

TOTAL

	TOTAL	MODE SPLIT AUTO Persons	AUTO Cars	TRANSIT	WALK/ OTHER	Check
TOTAL ADT:						
Work	6994	2098	1177	4196	699	6994
Non-Work	5389	1482	968	2297	1610	5389
Total	12383	3580	2145	6494	2309	12383
AM PEAK						
In						
Work	1350	405	226	810	135	1350
Non-Work	350	96	68	164	89	350
Total In:	1700	501	294	974	224	1700
Out						
Work	0	0	0	0	0	0
Non-work	253	70	49	118	65	253
Total Out:	253	70	49	118	65	253
Total						
Work	1350	405	226	810	135	1350
Non-work	603	166	117	283	154	603
Total	1953	571	343	1093	289	1953
PM PEAK						
In						
Work	103	31	18	62	10	103
Non-work	240	66	44	104	70	240
Total In	343	97	62	166	80	343
Out						
Work	1293	388	216	776	129	1293
Non-work	297	82	54	130	86	297
Total Out	1590	470	271	906	215	1590
Total						
Work	1396	419	234	838	140	1396
Non-work	537	148	98	234	155	537
Total	1933	566	333	1072	295	1933
SATURDAY TOTAL						
Work	2322	697	401	1393	232	2322
Non-Work	2390	657	357	810	923	2390
Total	4712	1354	758	2203	1155	4712
SATURDAY PEAK						
In						
Work	93	28	16	56	9	93
Non-work	121	33	18	41	47	121
Total In	214	61	34	97	56	214
Out						
Work	83	25	14	50	8	83
Non-work	116	32	17	39	45	116
Total Out	199	57	31	89	53	199
Total						
Work	176	53	30	106	18	176
Non-work	237	65	35	80	92	237
Total	413	118	65	186	109	413

295 Devonshire

Land Use	Size	Walk Trips In	Walk Trips Out	Walk Trips Total	Transit Trips In	Transit Trips Out	Transit Trips Total
Office	18,530 sf						
AM Peak Hour		4	1	5	34	5	39
PM Peak Hour		1	4	5	6	34	41
Average Daily		22	22	43	159	159	319
Sat Peak Hour		0	0	0	3	2	5
Retail	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Hotel	0 Rooms						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Daycare	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour							
Health Club	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Gallery/Museum	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Theatre	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Residential/Condo	0 Units						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Total							
AM Peak Hour		4	1	5	34	5	39
PM Peak Hour		1	4	5	6	34	41
Average Daily		22	22	43	159	159	319
Sat Peak Hour		0	0	0	3	2	5

Don Bosco

Land Use	Size	Walk Trips In	Walk Trips Out	Walk Trips Total	Transit Trips In	Transit Trips Out	Transit Trips Total
Office	58,500 sf						
AM Peak Hour		10	3	13	92	12	105
PM Peak Hour		3	9	12	16	89	105
Average Daily		51	51	103	378	378	756
Sat Peak Hour		1	1	1	9	7	16
Retail	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Hotel	203 Rooms						
AM Peak Hour		19	11	30	17	6	23
PM Peak Hour		19	13	32	11	11	23
Average Daily		228	228	456	233	233	466
Sat Peak Hour		19	15	33	19	15	34
Daycare	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour							
Health Club	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Gallery/Museum	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Theatre	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Residential/Condo	98 Units						
AM Peak Hour		4	24	27	3	19	22
PM Peak Hour		24	12	35	19	10	29
Average Daily		196	196	392	159	159	319
Sat Peak Hour		24	12	35	19	10	29
Total							
AM Peak Hour		33	37	71	112	38	150
PM Peak Hour		45	34	80	46	110	157
Average Daily		475	475	951	770	770	1540
Sat Peak Hour		43	27	70	47	32	79

Parcel C - 2

Land Use	Size	Walk Trips In	Walk Trips Out	Walk Trips Total	Transit Trips In	Transit Trips Out	Transit Trips Total
Office	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Retail	50,000 sf						
AM Peak Hour		8	7	15	22	6	27
PM Peak Hour		39	44	83	46	52	98
Average Daily		509	509	1018	517	517	1035
Sat Peak Hour		64	61	125	57	55	111
Hotel	0 Rooms						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Daycare	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour							
Health Club	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Gallery/Museum	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Theatre	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Residential/Condo	36 Units						
AM Peak Hour		1	9	10	1	7	8
PM Peak Hour		9	4	13	7	4	11
Average Daily		72	72	144	59	59	117
Sat Peak Hour		9	4	13	7	4	11
Total							
AM Peak Hour		9	16	25	23	13	35
PM Peak Hour		48	48	96	53	56	109
Average Daily		581	581	1162	576	576	1152
Sat Peak Hour		72	65	138	64	58	122

125 Summer Street

Land Use	Size	Walk Trips In	Walk Trips Out	Walk Trips Total	Transit Trips In	Transit Trips Out	Transit Trips Total
Office	446,861 sf						
AM Peak Hour		58	19	77	530	72	601
PM Peak Hour		17	49	66	87	483	570
Average Daily		237	237	473	1736	1736	3471
Sat Peak Hour		6	5	12	69	59	128
Retail	17,100 sf						
AM Peak Hour		3	2	5	7	2	9
PM Peak Hour		13	15	28	16	18	34
Average Daily		174	174	348	177	177	354
Sat Peak Hour		22	21	43	19	19	38
Hotel	0 Rooms						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Daycare	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour							
Health Club	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Gallery/Museum	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Theatre	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Residential/Condo	0 Units						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Total							
AM Peak Hour		61	21	82	537	74	611
PM Peak Hour		30	64	94	102	501	603
Average Daily		411	411	821	1913	1913	3825
Sat Peak Hour		28	26	55	88	77	166

45 Province Street

Land Use	Size	Walk Trips In	Walk Trips Out	Walk Trips Total	Transit Trips In	Transit Trips Out	Transit Trips Total
Office	142,890 sf						
AM Peak Hour		22	7	29	199	27	226
PM Peak Hour		6	19	26	34	187	221
Average Daily		101	101	201	738	738	1476
Sat Peak Hour		2	2	4	21	18	39
Retail	13,800 sf						
AM Peak Hour		2	2	4	6	2	8
PM Peak Hour		11	12	23	13	14	27
Average Daily		140	140	281	143	143	286
Sat Peak Hour		18	17	34	16	15	31
Hotel	0 Rooms						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Daycare	4,000 sf						
AM Peak Hour		8	7	16	32	28	60
PM Peak Hour		0	9	9	0	34	34
Average Daily		45	45	91	179	178	356
Sat Peak Hour							
Health Club	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Gallery/Museum	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Theatre	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Residential/Condo	0 Units						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Total							
AM Peak Hour		32	16	49	237	57	293
PM Peak Hour		17	40	57	46	236	282
Average Daily		286	286	573	1059	1059	2118
Sat Peak Hour		20	19	38	37	33	70

73 Tremont Street

Land Use	Size	Walk Trips In	Walk Trips Out	Walk Trips Total	Transit Trips In	Transit Trips Out	Transit Trips Total
Office	276,000 sf						
AM Peak Hour		39	12	51	350	47	397
PM Peak Hour		11	33	44	58	324	382
Average Daily		165	165	330	1209	1209	2419
Sat Peak Hour		4	3	7	42	35	77
Retail	20,000 sf						
AM Peak Hour		3	3	6	9	2	11
PM Peak Hour		16	18	33	18	21	39
Average Daily		204	204	407	207	207	414
Sat Peak Hour		25	24	50	23	22	45
Hotel	0 Rooms						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Daycare	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour							
Health Club	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Gallery/Museum	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Theatre	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Residential/Condo	0 Units						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Total							
AM Peak Hour		42	15	57	359	50	408
PM Peak Hour		27	51	77	76	345	421
Average Daily		368	368	737	1416	1416	2832
Sat Peak Hour		29	28	57	64	57	121

146 Bolyston Street

Land Use	Size	Walk Trips In	Walk Trips Out	Walk Trips Total	Transit Trips In	Transit Trips Out	Transit Trips Total
Office	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Retail	18,290 sf						
AM Peak Hour		3	3	5	8	2	10
PM Peak Hour		14	16	30	17	19	36
Average Daily		186	186	372	189	189	378
Sat Peak Hour		23	22	46	21	20	41
Hotel	0 Rooms						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Daycare	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour							
Health Club	1,200 sf						
AM Peak Hour		2	0	2	1	0	2
PM Peak Hour		1	1	2	1	1	2
Average Daily		20	20	40	17	17	33
Sat Peak Hour		0	0	0	0	0	0
Gallery/Museum	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Theatre	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Residential/Condo	39 Units						
AM Peak Hour		2	9	11	1	8	9
PM Peak Hour		9	5	14	8	4	11
Average Daily		78	78	156	63	63	127
Sat Peak Hour		9	5	14	8	4	11
Total							
AM Peak Hour		6	12	18	11	10	21
PM Peak Hour		25	22	47	25	24	49
Average Daily		284	284	568	269	269	538
Sat Peak Hour		33	27	60	28	24	52

Forty Franklin Street

Land Use	Size	Walk Trips In	Walk Trips Out	Walk Trips Total	Transit Trips In	Transit Trips Out	Transit Trips Total
Office	500,000 sf						
AM Peak Hour		64	21	85	583	79	662
PM Peak Hour		18	54	72	95	530	625
Average Daily		257	257	515	1888	1888	3777
Sat Peak Hour		7	6	13	78	66	144
Retail	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Hotel	0 Rooms						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Daycare	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour							
Health Club	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Gallery/Museum	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Theatre	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Residential/Condo	0 Units						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Total							
AM Peak Hour		64	21	85	583	79	662
PM Peak Hour		18	54	72	95	530	625
Average Daily		257	257	515	1888	1888	3777
Sat Peak Hour		7	6	13	78	66	144

64 - 74 Franklin Street

Land Use	Size	Walk Trips In	Walk Trips Out	Walk Trips Total	Transit Trips In	Transit Trips Out	Transit Trips Total
Office	79,000 sf						
AM Peak Hour		13	4	17	119	16	135
PM Peak Hour		4	12	16	21	115	135
Average Daily		64	64	129	473	473	946
Sat Peak Hour		1	1	2	12	10	21
Retail	9,000 sf						
AM Peak Hour		1	1	3	4	1	5
PM Peak Hour		7	8	15	8	9	18
Average Daily		92	92	183	93	93	186
Sat Peak Hour		11	11	22	10	10	20
Hotel	0 Rooms						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Daycare	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour							
Health Club	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Gallery/Museum	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Theatre	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Residential/Condo	0 Units						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Total							
AM Peak Hour		15	5	20	123	17	140
PM Peak Hour		11	20	31	29	124	153
Average Daily		156	156	312	566	566	1133
Sat Peak Hour		13	12	24	22	20	41

One Bowdoin Square

Land Use	Size	Walk Trips In	Walk Trips Out	Walk Trips Total	Transit Trips In	Transit Trips Out	Transit Trips Total
Office	130,914 sf						
AM Peak Hour		20	7	27	184	25	209
PM Peak Hour		6	18	24	31	174	206
Average Daily		94	94	188	691	691	1382
Sat Peak Hour		2	2	3	19	16	36
Retail	10,290 sf						
AM Peak Hour		2	1	3	4	1	6
PM Peak Hour		8	9	17	9	11	20
Average Daily		105	105	209	106	106	213
Sat Peak Hour		13	13	26	12	11	23
Hotel	0 Rooms						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Daycare	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour							
Health Club	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Gallery/Museum	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Theatre	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Residential/Condo	0 Units						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Total							
AM Peak Hour		22	8	30	189	26	215
PM Peak Hour		14	27	41	41	185	226
Average Daily		199	199	398	798	798	1595
Sat Peak Hour		15	14	29	31	28	59

Parcel R3 - R3A

Land Use	Size	Walk Trips In	Walk Trips Out	Walk Trips Total	Transit Trips In	Transit Trips Out	Transit Trips Total
Office	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Retail	5,000 sf						
AM Peak Hour		1	1	1	2	1	3
PM Peak Hour		4	4	8	5	5	10
Average Daily		51	51	102	52	52	103
Sat Peak Hour		6	6	12	6	5	11
Hotel	0 Rooms						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Daycare	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour							
Health Club	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Gallery/Museum	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Theatre	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Residential/Condo	261 Units						
AM Peak Hour		10	63	73	8	51	59
PM Peak Hour		63	31	94	51	25	76
Average Daily		522	522	1044	424	424	848
Sat Peak Hour		63	31	94	51	25	76
Total							
AM Peak Hour		11	63	75	11	51	62
PM Peak Hour		67	36	102	56	31	86
Average Daily		573	573	1146	476	476	952
Sat Peak Hour		69	37	106	57	31	87

90 Tremont Street

Land Use	Size	Walk Trips In	Walk Trips Out	Walk Trips Total	Transit Trips In	Transit Trips Out	Transit Trips Total
Office	185,500 sf						
AM Peak Hour		27	9	36	249	34	282
PM Peak Hour		8	24	32	42	233	275
Average Daily		122	122	245	898	898	1795
Sat Peak Hour		3	2	5	28	23	51
Retail	2,500 sf						
AM Peak Hour		0	0	1	1	0	1
PM Peak Hour		2	2	4	2	3	5
Average Daily		25	25	51	26	26	52
Sat Peak Hour		3	3	6	3	3	6
Hotel	0 Rooms						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Daycare	4,000 sf						
AM Peak Hour		8	7	16	32	28	50
PM Peak Hour		0	9	9	0	34	34
Average Daily		45	45	91	178	178	356
Sat Peak Hour							
Health Club	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Gallery/Museum	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Theatre	46,600 sf						
AM Peak Hour		0	0	0	3	0	3
PM Peak Hour		15	17	32	18	17	35
Average Daily		356	356	713	318	318	636
Sat Peak Hour		53	71	125	48	64	111
Residential/Condo	0 Units						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Total							
AM Peak Hour		36	17	53	285	62	347
PM Peak Hour		25	51	77	62	286	348
Average Daily		550	550	1099	1419	1419	2839
Sat Peak Hour		59	77	136	78	90	168

The Parkside Projects

Land Use	Size	Walk Trios In	Walk Trios Out	Walk Trios Total	Transit Trips In	Transit Trips Out	Transit Trips Total
Office	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Retail	7,386 sf						
AM Peak Hour		1	1	2	3	1	4
PM Peak Hour		6	7	12	7	8	14
Average Daily		75	75	150	76	76	153
Sat Peak Hour		9	9	18	8	8	16
Hotel	0 Rooms						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Daycare	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour							
Health Club	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Gallery/Museum	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Theatre	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Residential/Condo	267 Units						
AM Peak Hour		11	64	75	9	52	61
PM Peak Hour		64	32	96	52	26	78
Average Daily		534	534	1068	434	434	868
Sat Peak Hour		64	32	96	52	26	78
Total							
AM Peak Hour		12	65	77	12	53	65
PM Peak Hour		70	39	108	59	34	93
Average Daily		609	609	1218	510	510	1021
Sat Peak Hour		73	41	115	60	34	95

Pavillion at Park Square

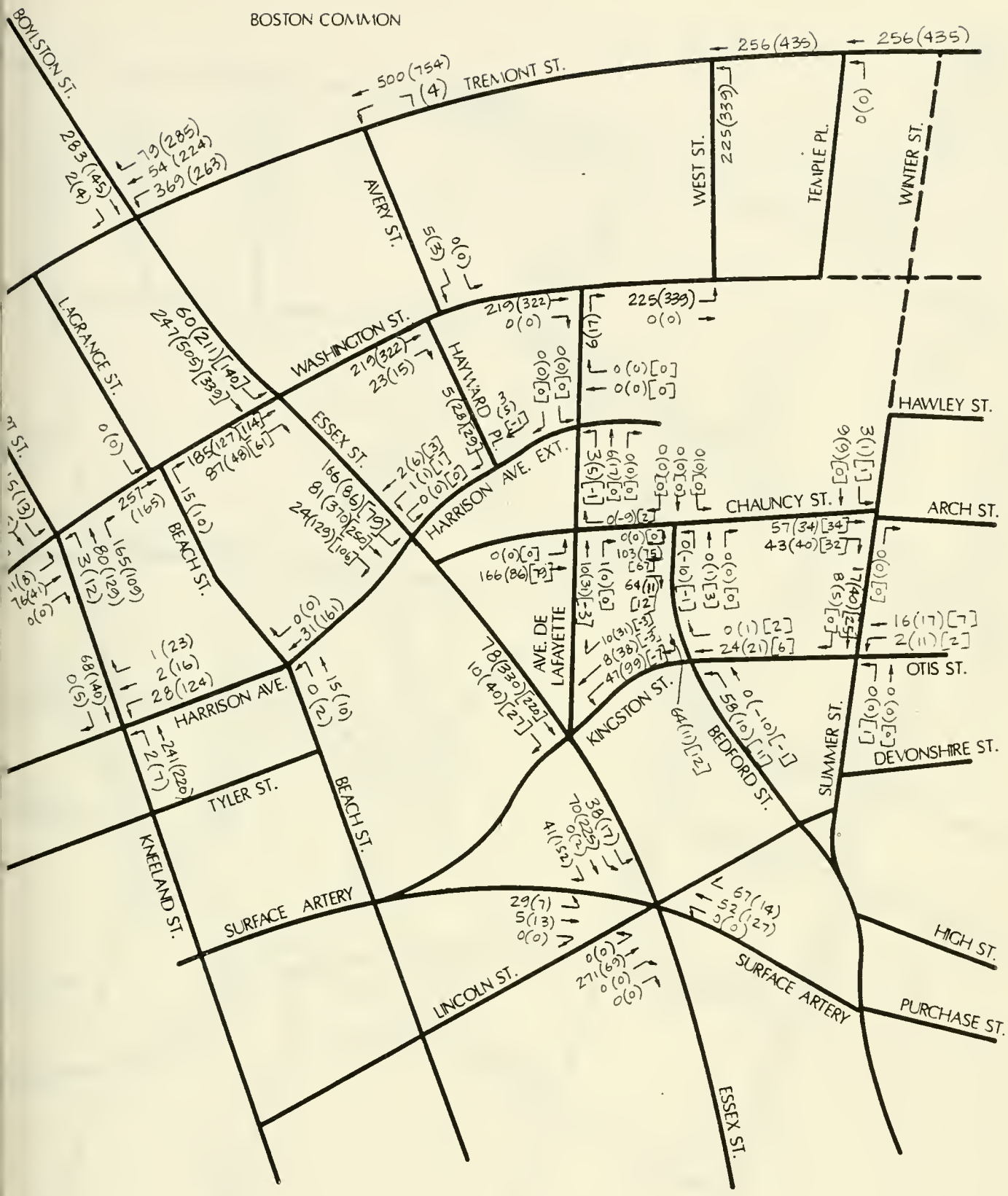
Land Use	Size	Walk Trips In	Walk Trips Out	Walk Trips Total	Transit Trips In	Transit Trips Out	Transit Trips Total
Office	75,000 sf						
AM Peak Hour		13	4	17	114	15	130
PM Peak Hour		4	11	15	20	110	129
Average Daily		62	62	124	455	455	910
Sat Peak Hour		1	1	2	11	9	20
Retail	25,000 sf						
AM Peak Hour		4	4	7	11	3	14
PM Peak Hour		20	22	42	23	26	49
Average Daily		254	254	509	259	259	517
Sat Peak Hour		32	31	62	28	27	56
Hotel	0 Rooms						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Daycare	1,345 sf						
AM Peak Hour		3	2	5	11	10	20
PM Peak Hour		0	3	3	0	11	11
Average Daily		15	15	30	60	60	120
Sat Peak Hour							
Health Club	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Gallery/Museum	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Theatre	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Residential/Condo	110 Units						
AM Peak Hour		4	26	31	4	21	25
PM Peak Hour		26	13	40	21	11	32
Average Daily		220	220	440	179	179	358
Sat Peak Hour		26	13	40	21	11	32
Total							
AM Peak Hour		24	36	60	139	49	188
PM Peak Hour		50	49	99	64	158	222
Average Daily		552	552	1103	952	952	1905
Sat Peak Hour		59	45	104	61	47	108

110 - 120 Tremont Street

Land Use	Size	Walk Trips In	Walk Trips Out	Walk Trips Total	Transit Trips In	Transit Trips Out	Transit Trips Total
Office	354,923 sf						
AM Peak Hour		48	15	63	434	59	493
PM Peak Hour		14	41	54	72	399	470
Average Daily		199	199	398	1460	1460	2921
Sat Peak Hour		5	4	9	54	46	100
Retail	20,000 sf						
AM Peak Hour		3	3	6	9	2	11
PM Peak Hour		16	18	33	18	21	39
Average Daily		204	204	407	207	207	414
Sat Peak Hour		25	24	50	23	22	45
Hotel	0 Rooms						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Daycare	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour							
Health Club	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Gallery/Museum	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Theatre	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Residential/Condo	0 Units						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Total							
AM Peak Hour		51	18	69	443	61	504
PM Peak Hour		29	58	87	90	420	510
Average Daily		403	403	805	1667	1667	3334
Sat Peak Hour		31	29	59	77	68	145

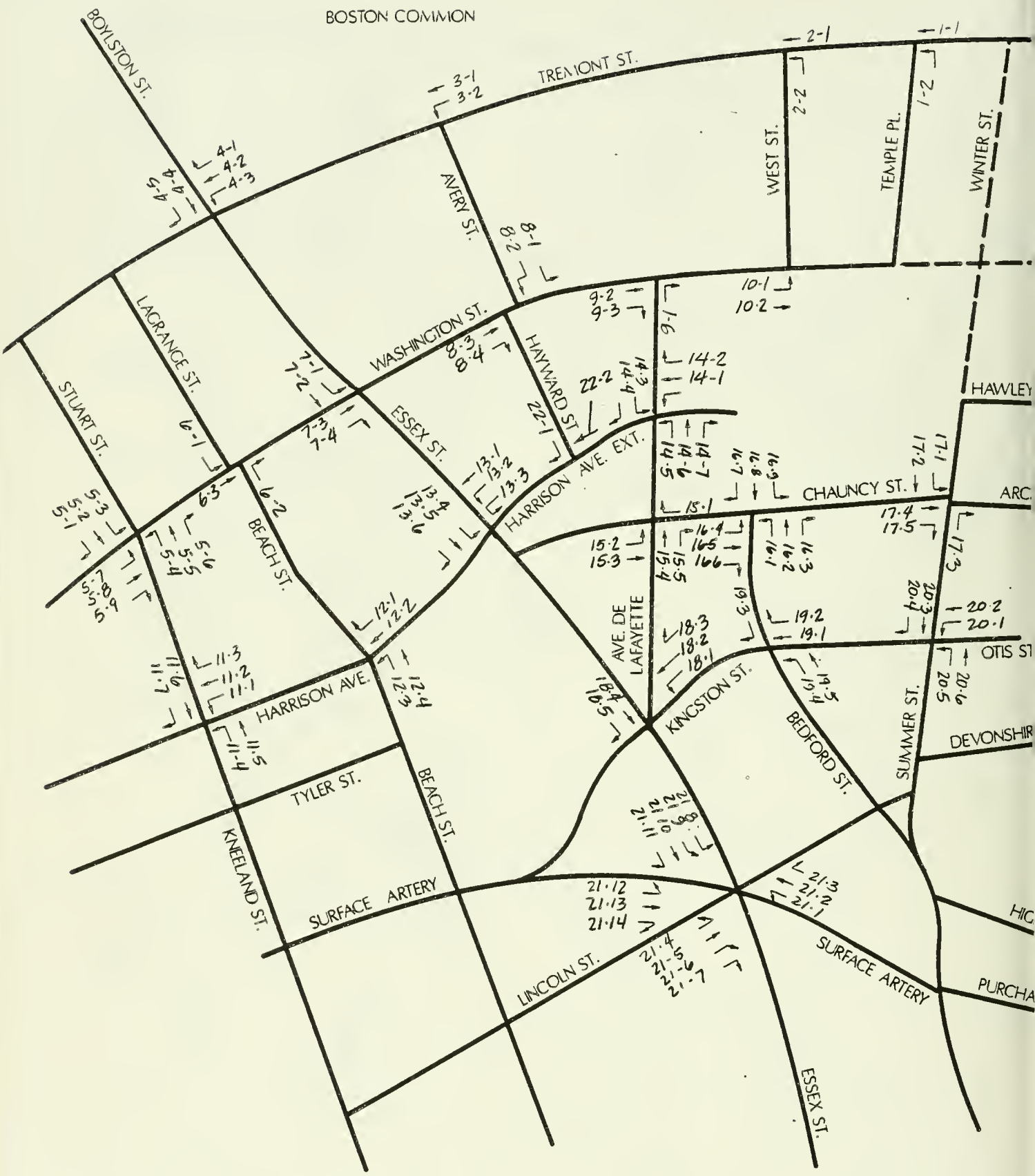
Other Development Trip Assignments

Existing Roadway Network



TRIPS DUE TO OTHER DEVELOPMENTS
WITH EXISTING NETWORK
AM (PM) [SAT]

NOTE SATURDAY TRIPS DISTRIBUTED INTO INTERSECTIONS
ANALYZED FOR SATURDAY CONDITIONS



MOVEMENT NUMBERS

MOVEMENT NUMBER	1989 EXISTING VOLUMES AM	PM	SAT	GROWTH VOLUME @ 0.5%/YR AM	PM	SAT	OTHER DEVELOPMENTS AM	PM	SAT	EXISTING NETWORK 1995 NO-BUILD VOLUMES AM	PM	SAT
1 - 1	882	1187		27	36		256	435		1165	1658	
1 - 2	201	293		6	9		0	0		207	302	
2 - 1	1083	1480		33	45		256	435		1372	1960	
2 - 2	228	263		7	8		225	339		460	610	
3 - 1	1188	1604		36	49		500	754		1724	2407	
3 - 2	123	139		4	4		7	4		134	147	
4 - 1	188	356		6	11		79	285		273	652	
4 - 2	823	1089		25	33		54	224		902	1346	
4 - 3	177	159		5	5		369	263		551	427	
4 - 4	570	695		17	21		283	145		870	851	
4 - 5	150	317		5	10		2	4		157	331	
5 - 1	35	64		1	2		2	7		38	73	
5 - 2	654	577		20	18		67	145		741	740	
5 - 3	122	157		4	5		15	13		141	175	
5 - 4	119	90		4	3		3	12		126	105	
5 - 5	569	693		17	21		80	129		666	843	
5 - 6	144	89		4	3		165	109		313	201	
5 - 7	205	72		6	2		11	8		222	82	
5 - 8	319	158		10	5		76	41		405	204	
5 - 9	103	210		3	6		0	0		106	216	
6 - 1	28	27		1	1		0	0		29	28	
6 - 2	73	305		2	9		15	10		90	324	
6 - 3	585	409		18	12		257	165		860	586	
7 - 1	127	165	185	4	5	6	60	211	140	191	381	331
7 - 2	620	689	563	19	21	17	247	505	339	886	1215	919
7 - 3	343	289	217	10	9	7	185	127	114	538	425	338
7 - 4	343	447	222	10	14	7	87	48	61	440	509	290
8 - 1	118	125		4	4		0	0		122	129	
8 - 2	5	14		0	0		5	3		10	17	
8 - 3	435	394		13	12		219	322		667	728	
8 - 4	35	61		1	2		23	15		59	78	
9 - 1	75	169		2	5		6	17		83	191	
9 - 2	354	387		11	12		219	322		584	721	
9 - 3	199	132		6	4		0	0		205	136	
10 - 1	228	263		7	8		225	339		460	610	
10 - 2	201	293		6	9		0	0		207	302	
11 - 1	84	169		3	5		28	124		115	298	
11 - 2	119	212		4	6		2	16		125	234	
11 - 3	145	158		4	5		1	23		150	186	
11 - 4	72	75		2	2		2	7		76	84	
11 - 5	687	714		21	22		241	220		949	956	
11 - 6	679	723		21	22		68	140		765	865	
11 - 7	78	72		2	2		0	5		80	79	
12 - 1	118	103		4	3		0	0		122	106	
12 - 2	177	319		5	10		31	161		213	490	
12 - 3	169	220		5	7		0	2		174	229	
12 - 4	86	111		3	3		15	10		104	124	
13 - 1	82	200	114	2	6	3	7	32	27	91	238	144
13 - 2	57	123	154	2	4	5	1	1	1	60	128	160
13 - 3	28	35	86	1	1	3	0	0	0	29	36	89
13 - 4	231	256	170	7	8	5	166	86	79	404	350	254

MOVEMENT NUMBER	1989 EXISTING VOLUMES AM	PM	SAT	GROWTH VOLUME @ 0.5%/YR AM	PM	SAT	OTHER DEVELOPMENTS AM	PM	SAT	EXISTING NETWORK 1995 NO-BUILD VOLUM AM	PM	SA
13 - 5	519	658	455	16	20	14	81	370	250	616	1048	
13 - 6	213	222	160	6	7	5	24	129	105	243	358	
14 - 1	6	85	28	0	3	1	0	0	0	6	88	
14 - 2	2	22	19	0	1	1	0	0	0	2	23	
14 - 3	148	49	59	4	1	2	0	0	0	152	50	
14 - 4	48	83	169	1	3	5	0	0	0	49	86	
14 - 5	73	117	136	2	4	4	3	5	-1	78	126	
14 - 6	73	147	126	2	4	4	6	17	0	81	168	
14 - 7	50	10	24	2	0	1	0	0	0	52	10	
15 - 1	168	223	188	5	7	6	0	-9	2	173	221	
15 - 2	16	20	15	0	1	0	0	0	0	16	21	
15 - 3	243	271	240	7	8	7	166	86	79	416	365	
15 - 4	12	31	83	0	1	3	10	31	-3	22	63	
15 - 5	12	30	8	0	1	0	1	0	0	13	31	
16 - 1	168	180	185	5	5	6	0	-9	2	173	176	
16 - 2	124	80	30	4	2	1	0	0	0	128	82	
16 - 3	95	50	116	3	2	4	0	0	0	98	52	
16 - 4	17	15	10	1	0	0	0	0	0	18	15	
16 - 5	172	237	152	5	7	5	103	75	67	280	319	
16 - 6	66	49	86	2	1	3	54	11	12	132	61	
16 - 7	0	43	3	0	1	0	0	0	0	0	44	
16 - 8	17	109	30	1	3	1	0	0	0	18	112	
16 - 9	16	50	12	0	2	0	0	0	0	16	52	
17 - 1	17	44	58	1	1	2	3	1	1	21	46	
17 - 2	37	84	122	1	3	4	9	9	0	47	96	
17 - 3	4	8	1	0	0	0	0	0	0	4	8	
17 - 4	233	277	208	7	8	6	84	39	41	324	324	
17 - 5	50	70	72	2	2	2	16	35	25	68	107	
18 - 1	218	360	262	7	11	8	47	99	-7	272	470	
18 - 2	93	298	165	3	9	5	8	38	-3	104	345	
18 - 3	24	61	91	1	2	3	10	31	-3	35	94	
18 - 4	551	695	547	17	21	17	78	330	220	646	1046	
18 - 5	25	86	62	1	3	2	10	40	27	36	129	
19 - 1	189	350	235	6	11	7	24	21	6	219	382	
19 - 2	104	160	189	3	5	6	0	1	2	107	166	
19 - 3	83	158	116	3	5	4	64	11	12	150	174	
19 - 4	63	116	79	2	4	2	58	10	11	123	130	
19 - 5	283	160	142	9	5	4	0	-10	-1	292	155	
20 - 1	52	82	35	2	2	1	2	11	2	56	95	
20 - 2	156	~~293~~ 345	165	5	~~9~~ 10	5	16	17	7	177	~~319~~ 372	
20 - 3	39	71	75	1	2	2	17	40	25	57	113	
20 - 4	48	83	119	1	3	4	8	5	0	57	91	
20 - 5	89	82	140	3	2	4	0	0	1	92	84	
20 - 6	4	8	1	0	0	0	0	0	0	4	8	
21 - 1	72	35		2	1		0	0		74	36	
21 - 2	735	1177		22	36		52	127		809	1340	
21 - 3	12	7		0	0		67	14		79	21	
21 - 4	70	34		2	1		0	0		72	35	
21 - 5	693	200		21	6		271	69		985	275	
21 - 6	284	207		9	6		0	0		293	213	
21 - 7	32	12		1	0		0	0		33	12	

MOVEMENT NUMBER	1989 EXISTING VOLUMES AM	PM	SAT	GROWTH VOLUME @ 0.5%/YR AM	PM	SAT	OTHER DEVELOPMENTS AM	PM	SAT	EXISTING NETWORK 1995 NO-BUILD VOLUMES AM	PM	SAT
21 - 8	90	132		3	4		38	17		131	153	
21 - 9	465	521		14	16		70	255		549	792	
21 - 10	89	82		3	2		0	2		92	86	
21 - 11	125	320		4	10		41	152		170	482	
21 - 12	59	37		2	.1		29	7		90	45	
21 - 13	502	679		15	21		5	13		522	713	
21 - 14	18	13		1	0		0	0		19	13	
22 - 1	40	75	20	1	2	1	5	28	29	46	105	50
22 - 2	127	285	333	4	9	10	3	5	-1	134	299	342

Movement Number	110-120 TREMONT ST AM	PM	SAT	PAVILLION @ PRK SQ AM	PM	SAT	PARKSIDE PROJECTS AM	PM	SAT	90 TREMONT AM	PM	SAT	600 WASHINGTON ST AM	PM	SAT
1 - 1	16	95	19	3	4	2	3	20	19	14	68	35	2	1	1
1 - 2															
2 - 1	16	95	19	3	4	2	3	20	19	14	68	35	2	1	1
2 - 2							3	15	17						
3 - 1	16	95	19	3	4	2	27	16	18	14	68	35			
3 - 2							5	3	2				2	1	1
4 - 1	0	3	1				8	2	5	3	19	5			
4 - 2	14	85	16	3	4	2	14	11	11	9	36	20			
4 - 3	2	7	2				5	3	2	2	13	10	2	1	1
4 - 4	20	3	3				1	4	3				9	5	6
4 - 5															
5 - 1															
5 - 2	5	32	7	4	13	9	8	7	7	5	19	15			
5 - 3							0	3	3				15	10	11
5 - 4															
5 - 5				8	6	7							0	20	18
5 - 6							1	4	5	3	0	4	32	23	25
5 - 7				2	2	1									
5 - 8	13	2	2				1	3	3	1	0	3	19	12	15
5 - 9															
6 - 1															
6 - 2													15	10	10
6 - 3	13	2	2				2	10	11	5	0	11	66	45	51
7 - 1							1	4	3				4	2	2
7 - 2	22	10	5				5	3	2	2	13	10	7	4	5
7 - 3							2	10	11				19	13	17
7 - 4	13	2	2							5	0	11	62	42	44
8 - 1															
8 - 2							5	3	2						
8 - 3							3	14	14						
8 - 4													23	15	19
9 - 1							0	1	3						
9 - 2							3	14	14						
9 - 3															
10 - 1							3	15	17						
10 - 2															
11 - 1							4	2	2				1	41	47
11 - 2							1	1	0				0	12	14
11 - 3													0	20	16
11 - 4															
11 - 5				8	6	7	1	4	5	3	0	4	32	23	25
11 - 6	6	30	7	4	13	9	8	7	7	5	19	15			
11 - 7		2													
12 - 1															
12 - 2							5	3	2				1	73	79
12 - 3															
12 - 4													15	10	10
13 - 1							4	2	1				0	25	27
13 - 2							1	1	1						
13 - 3															
13 - 4	33	5	5							5	0	11			

Movement Number	110-120 TREMONT ST AM	110-120 TREMONT ST PM	110-120 TREMONT ST SAT	PAVILLION @ PRK SQ AM	PAVILLION @ PRK SQ PM	PAVILLION @ PRK SQ SAT	PARKSIDE PROJECTS AM	PARKSIDE PROJECTS PM	PARKSIDE PROJECTS SAT	90 TREMONT AM	90 TREMONT PM	90 TREMONT SAT	600 WASHINGTON ST AM	600 WASHINGTON ST PM	600 WASHINGTON ST SAT
13 - 5	2	7	2				4	2	1	2	13	10	1	29	31
13 - 6							1	1	1				1	48	52
14 - 1															
14 - 2															
14 - 3															
14 - 4															
14 - 5															
14 - 6							0	1	3						
14 - 7															
15 - 1							0	1	3						
15 - 2															
15 - 3	33	5	5							5	0	11			
15 - 4															
15 - 5															
16 - 1							0	1	3						
16 - 2															
16 - 3															
16 - 4															
16 - 5	33	5	5							5	0	11			
16 - 6															
16 - 7															
16 - 8															
16 - 9															
17 - 1															
17 - 2															
17 - 3															
17 - 4	33	5	5							5	0	11			
17 - 5															
18 - 1															
18 - 2															
18 - 3															
18 - 4	2	7	2				5	3	2	2	13	10	1	27	29
18 - 5													0	2	2
19 - 1															
19 - 2							0	1	2						
19 - 3															
19 - 4															
19 - 5															
20 - 1															
20 - 2							0	1	1						
20 - 3															
20 - 4															
20 - 5							0	0	1						
20 - 6															
21 - 1															
21 - 2													15	10	10
21 - 3															
21 - 4															
21 - 5	34	8	7							20	6	10			
21 - 6															
21 - 7															

Movement Number	110-120 TREMONT ST AM	PM	SAT	PAVILLION @ PRK SQ AM	PM	SAT	PARKSIDE PROJECTS AM	PM	SAT	90 TREMONT AM	PM	SAT	600 WASHINGTON ST AM	PM	SAT
21 - 8	1	4	1				1	1	0	0	3	2			
21 - 9	1	3	1				4	2	2	2	10	8	1	25	27
21 - 10													0	2	2
21 - 11															
21 - 12															
21 - 13															
21 - 14															
22 - 1							5	3	2				0	25	27
22 - 2															

Movement Number	PARCEL R3-R3A			ONE BOWDOIN SQUARE			64-74 FRANKLIN ST			FORTY FRANKLIN			146 BOYLSTON		
	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
1 - 1				2	9	2	2	8	3	6	32	4	2	5	6
1 - 2															
2 - 1				2	9	2	2	8	3	6	32	4	2	5	6
2 - 2															
3 - 1				2	9	2	2	8	3	6	32	4	2	5	6
3 - 2															
4 - 1				0	1	0	0	2	0	1	3	0	2	5	6
4 - 2				2	7	2	2	5	3	4	27	3			
4 - 3				0	1	0	0	1	0	1	3	1			
4 - 4							1	1	1	4	1	1	2	5	5
4 - 5													2	4	4
5 - 1	2	7	6												
5 - 2	0	3	3	1	4	1	0	1	1	2	14	2	2	2	3
5 - 3										1	0	0			
5 - 4	0	2	3												
5 - 5													1	2	2
5 - 6										1	0	0			
5 - 7	6	3	5												
5 - 8							1	0	0	3	1	1			
5 - 9															
6 - 1															
6 - 2															
6 - 3							1	0	0	5	1	1			
7 - 1															
7 - 2				0	1	0	1	2	1	5	3	2	2	5	5
7 - 3															
7 - 4							1	0	0	5	1	1			
8 - 1															
8 - 2															
8 - 3															
8 - 4															
9 - 1															
9 - 2															
9 - 3															
10 - 1															
10 - 2															
11 - 1															
11 - 2	0	2	2												
11 - 3															
11 - 4	2	7	6												
11 - 5	0	2	3							1	0	0	1	2	2
11 - 6				1	4	1	0	1	1	2	14	2	2	2	3
11 - 7	0	3	3												
12 - 1															
12 - 2															
12 - 3	0	2	2												
12 - 4															
13 - 1															
13 - 2															
13 - 3															
13 - 4							2	1	1	9	2	2			

Movement Number	PARCEL R3-R3A			ONE BOWDOIN SQUARE			64-74 FRANKLIN ST			FORTY FRANKLIN			146 BOYLSTON		
	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
13 - 5				0	1	0	0	1	0	1	2	1	2	5	5
13 - 6															
14 - 1															
14 - 2															
14 - 3															
14 - 4															
14 - 5															
14 - 6															
14 - 7															
15 - 1															
15 - 2															
15 - 3							2	1	1	9	2	2			
15 - 4															
15 - 5															
16 - 1															
16 - 2															
16 - 3															
16 - 4															
16 - 5							2	1	1	9	2	2			
16 - 6															
16 - 7															
16 - 8															
16 - 9															
17 - 1															
17 - 2										1	9	0			
17 - 3															
17 - 4							2	1	1	9	2	2			
17 - 5															
18 - 1							0	1	0	0	4	0			
18 - 2										0	4	0			
18 - 3															
18 - 4				0	1	0	0	1	0	1	3	1	2	5	5
18 - 5															
19 - 1							0	1	0	0	9	0			
19 - 2															
19 - 3															
19 - 4															
19 - 5															
20 - 1							0	1	0	1	5	0			
20 - 2							0	1	0	0	4	0			
20 - 3										1	5	0			
20 - 4										0	4	0			
20 - 5															
20 - 6															
21 - 1															
21 - 2															
21 - 3															
21 - 4															
21 - 5							9	3	2	43	8	6			
21 - 6															
21 - 7															

Movement Number	PARCEL R3-R3A			ONE BOWDOIN SQUARE			64-74 FRANKLIN ST			FORTY FRANKLIN			146 BOYLSTON		
	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
21 - 8															
21 - 9				0	1	0				1	3	1	2	5	5
21 - 10															
21 - 11							0	2	0	0	4	0			
21 - 12															
21 - 13															
21 - 14															
22 - 1															
22 - 2															

Movement Number	73 TREMONT STREET AM	PM	SAT	45 PROVIDENCE ST AM	PM	SAT	125 SUMMER STREET AM	PM	SAT	PARCEL C-2 AM	PM	SAT	DON BOSCO AM	PM	SAT
1 - 1	7	46	8	3	10	2									
1 - 2															
2 - 1	7	46	8	3	10	2									
2 - 2															
3 - 1	7	46	8	3	10	2									
3 - 2															
4 - 1	1	7	1	1	1	0									
4 - 2	4	32	6	2	9	2									
4 - 3	2	7	1												
4 - 4							15	4	3						
4 - 5															
5 - 1															
5 - 2	2	15	3				15	4	3	6	22	26	3	6	3
5 - 3															
5 - 4										3	10	13			
5 - 5							3	15	3	4	12	15	54	41	40
5 - 6															
5 - 7													3	3	2
5 - 8	3	1	1	2	1	1									
5 - 9															
6 - 1															
6 - 2															
6 - 3	3	1	1	2	1	1									
7 - 1															
7 - 2	2	7	1				15	4	3						
7 - 3	3	1	1												
7 - 4				2	1	1									
8 - 1															
8 - 2															
8 - 3															
8 - 4															
9 - 1															
9 - 2															
9 - 3															
10 - 1															
10 - 2															
11 - 1															
11 - 2															
11 - 3															
11 - 4															
11 - 5							3	15	3	7	22	28	54	41	40
11 - 6	2	15	3				15	4	3	6	22	26	3	6	3
11 - 7															
12 - 1															
12 - 2															
12 - 3															
12 - 4															
13 - 1															
13 - 2															
13 - 3															
13 - 4	3	1	1	3	1	1									

Movement Number	73 TREMONT STREET AM	PM	SAT	45 PROVIDENCE ST AM	PM	SAT	125 SUMMER STREET AM	PM	SAT	PARCEL C-2 AM	PM	SAT	DON BOSCO AM	PM	SAT
13 - 5	2	7	1				15	4	3						
13 - 6															
14 - 1															
14 - 2															
14 - 3															
14 - 4															
14 - 5															
14 - 6															
14 - 7															
15 - 1															
15 - 2															
15 - 3	3	1	1	3	1	1									
15 - 4															
15 - 5															
16 - 1															
16 - 2															
16 - 3															
16 - 4															
16 - 5	3	1	1	3	1	1									
16 - 6															
16 - 7															
16 - 8															
16 - 9															
17 - 1	3	1	1												
17 - 2							8	1	0						
17 - 3															
17 - 4				3	1	1									
17 - 5															
18 - 1							17	3	0						
18 - 2	0	2	0	0	1	0									
18 - 3															
18 - 4	2	7	1				15	4	3						
18 - 5															
19 - 1	0	2	0	0	1	0	17	3	0						
19 - 2															
19 - 3															
19 - 4															
19 - 5															
20 - 1	0	3	1	1	2	1									
20 - 2	0	2	0	0	1	0	9	2	0						
20 - 3															
20 - 4							8	1	0						
20 - 5															
20 - 6															
21 - 1															
21 - 2							16	91	17	2	6	8	16	12	11
21 - 3							49	10	9						
21 - 4															
21 - 5	23	5	5	17	5	4	65	14	12						
21 - 6															
21 - 7															

Movement Number	73 TREMONT STREET			45 PROVIDENCE ST			125 SUMMER STREET			PARCEL C-2			DON BOSCO		
	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
21 - 8							32	7	3						
21 - 9	2	7	1												
21 - 10															
21 - 11															
21 - 12							15	4	3						
21 - 13										2	7	8	3	6	3
21 - 14															
22 - 1															
22 - 2															

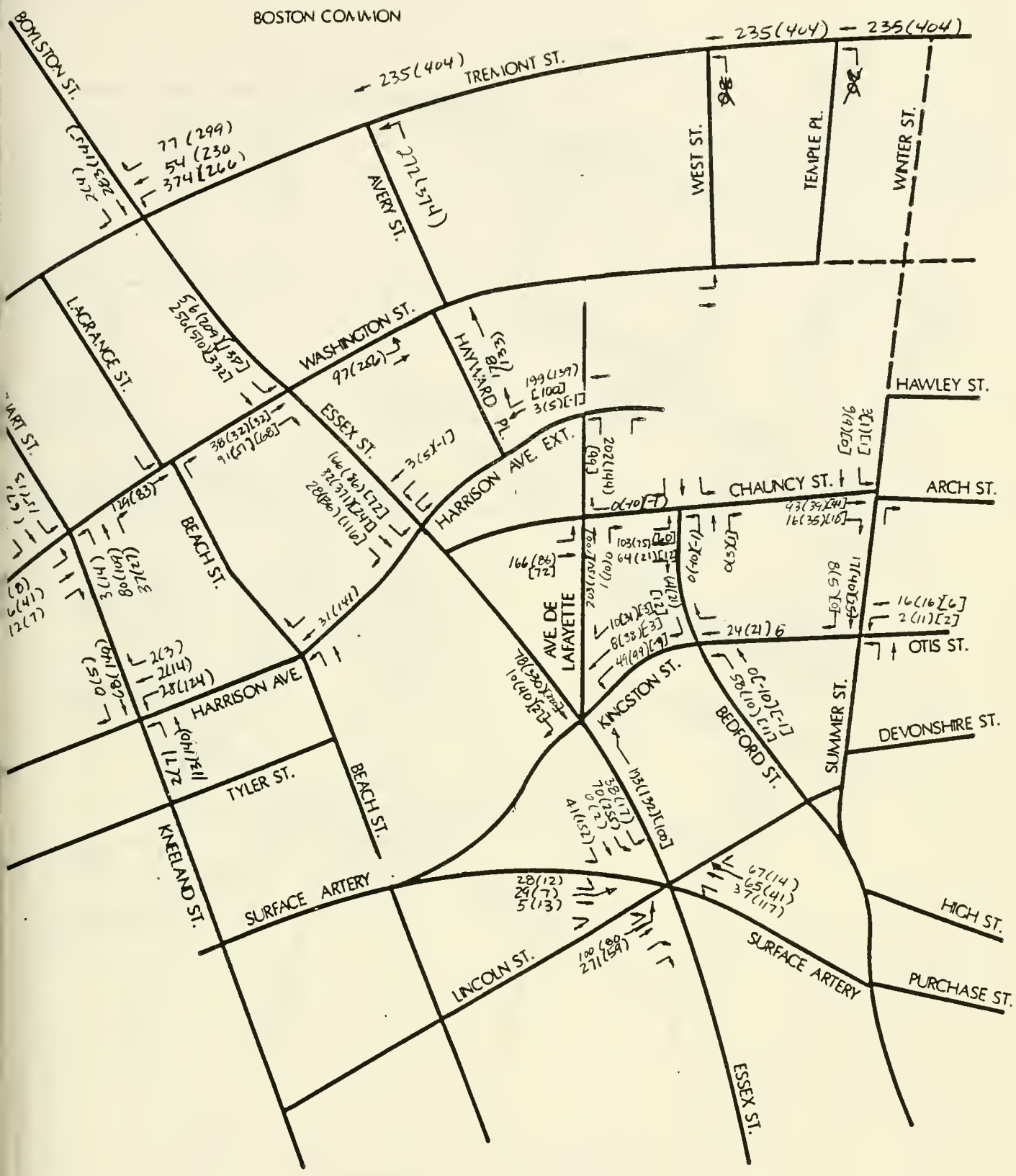
Movement Number	KINGSTON-BEDFORD AM	KINGSTON-BEDFORD PM	KINGSTON-BEDFORD SAT	COMMONWEALTH CENTER AM	COMMONWEALTH CENTER PM	COMMONWEALTH CENTER SAT	295 DEVONSHIRE AM	295 DEVONSHIRE PM	295 DEVONSHIRE SAT	POST OFFICE SQUARE GARAGE AM	POST OFFICE SQUARE GARAGE PM	POST OFFICE SQUARE GARAGE SAT
1 - 1	2	1	1	192	123	101	0	2	0	2	11	3
1 - 2												
2 - 1	2	1	1	192	123	101	0	2	0	2	11	3
2 - 2	6	16	-3	216	308	220						
3 - 1	8	17	-2	408	431	321	0	2	0	2	11	3
3 - 2												
4 - 1	6	24	-1	55	205	135	0	2	0	2	11	3
4 - 2	0	8	2									
4 - 3	2	1	1	353	226	186						
4 - 4	23	8	6	165	107	88	2	0	0	41	7	11
4 - 5												
5 - 1												
5 - 2										14	3	4
5 - 3	-1	0	-2									
5 - 4												
5 - 5	7	10	-2							3	23	5
5 - 5				128	82	65						
5 - 7												
5 - 8				33	21	20						
5 - 9												
5 - 1												
6 - 2												
6 - 3	-1	2	2	161	103	85						
7 - 1				55	205	135						
7 - 2	25	9	7	118	437	287	2	0	0	41	7	11
7 - 3				161	103	85						
7 - 4	-1	2	2									
8 - 1												
8 - 2												
8 - 3				216	308	220						
9 - 4												
9 - 1	6	16	-3									
9 - 2				216	308	220						
9 - 3												
10 - 1	6	16	-3	216	308	220						
10 - 2												
11 - 1	1	1	0	22	80	53						
11 - 2	1	1	-1									
11 - 3	1	3	0									
11 - 4												
11 - 5				128	82	65				3	23	6
11 - 6										14	3	4
11 - 7												
12 - 1												
12 - 2	3	5	-1	22	80	53						
12 - 3												
12 - 4												
13 - 1	3	5	-1									
13 - 2												
13 - 3												
13 - 4	54	11	12	18	60	39	2	0	0	27	5	7

Movement Number	KINGSTON-BEDFORD AM	KINGSTON-BEDFORD PM	KINGSTON-BEDFORD SAT	COMMONWEALTH CENTER AM	COMMONWEALTH CENTER PM	COMMONWEALTH CENTER SAT	295 DEVONSHIRE AM	295 DEVONSHIRE PM	295 DEVONSHIRE SAT	POST OFFICE SQUARE GARAGE AM	POST OFFICE SQUARE GARAGE PM	POST OFFICE SQUARE GARAGE SAT
13 - 5	-40	0	-3	78	297	195				14	2	4
13 - 6				22	80	53						
14 - 1												
14 - 2												
14 - 3												
14 - 4												
14 - 5	3	5	-1									
14 - 6	6	16	-3									
14 - 7												
15 - 1	0	-10	-1									
15 - 2												
15 - 3	64	11	12	18	60	39	2	0	0	27	5	7
15 - 4	10	31	-3									
15 - 5	1	0	0									
16 - 1	0	-10	-1									
16 - 2												
16 - 3												
16 - 4												
16 - 5	1	0	0	18	60	39	2	0	0	27	5	7
16 - 6	64	11	12									
16 - 7												
16 - 8												
16 - 9												
17 - 1												
17 - 2												
17 - 3												
17 - 4	1	0	0	4	25	14				27	5	7
17 - 5				14	35	25	2	0	0			
18 - 1	29	86	-12				1	5	0			
18 - 2	8	31	-3									
18 - 3	10	31	-3									
18 - 4	-40	0	-3	88	259	170						
18 - 5				10	38	25						
19 - 1	6	1	1				1	5	0			
19 - 2												
19 - 3	64	11	12									
19 - 4	58	10	11									
19 - 5	0	-10	-1									
20 - 1												
20 - 2	6	1	1				1	5	0			
20 - 3				14	35	25	2	0	0			
20 - 4												
20 - 5												
20 - 6												
21 - 1												
21 - 2	0	-15	-4							3	23	6
21 - 3	18	4	3									
21 - 4												
21 - 5	17	12	9				5	1	0	36	7	10
21 - 6												
21 - 7												

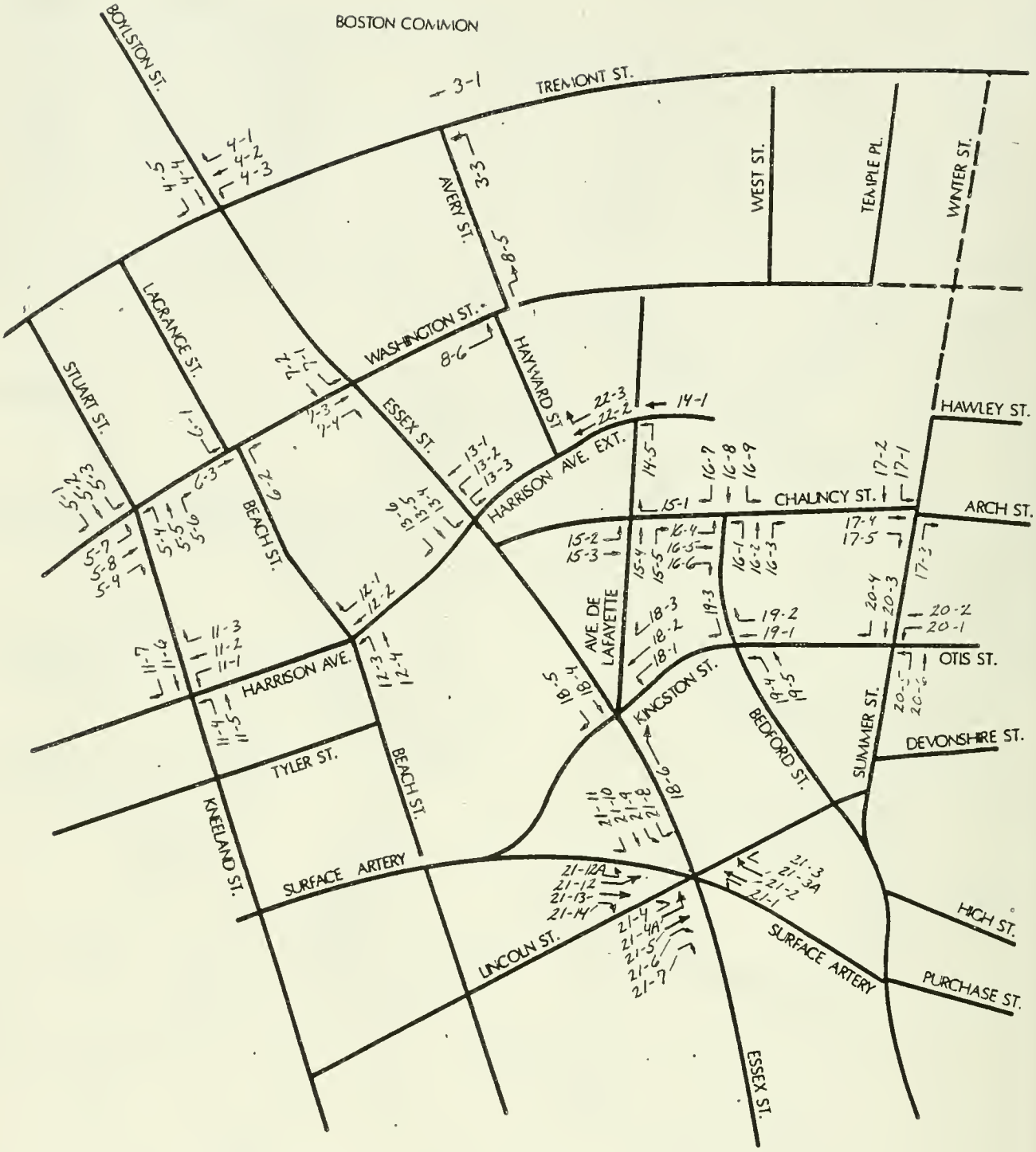
Movement Number	KINGSTON-BEDFORD AM	KINGSTON-BEDFORD PM	KINGSTON-BEDFORD SAT	COMMONWEALTH CENTER AM	COMMONWEALTH CENTER PM	COMMONWEALTH CENTER SAT	295 DEVONSHIRE AM	295 DEVONSHIRE PM	295 DEVONSHIRE SAT	POST OFFICE SQUARE GARAGE AM	POST OFFICE SQUARE GARAGE PM	POST OFFICE SQUARE GARAGE SAT
21 - 8	-10	0	-1							14	2	4
21 - 9	11	21	-6	46	178	117						
21 - 10												
21 - 11	18	60	-6	22	81	53	1	5	0			
21 - 12										14	3	4
21 - 13												
21 - 14												
22 - 1												
22 - 2	3	5	-1									

Other Development Trip Assignments

Revised Roadway Network



TRIPS DUE TO OTHER
DEVELOPMENTS. REVISED NETWORK
AM (PM) [SAT]



REVISED NETWORK

MOVEMENT NUMBER	REVISED NETWORK 1989 EXISTING VOLUMES AM	PM	SAT	GROWTH VOLUME @ 0.5%/YR AM	PM	SAT	OTHER DEVELOPMENTS AM	PM	SAT	REVISED NETWORK 1995 NO-BUILD VOLUMES AM	PM	SAT
1 - 1	882	1111		27	34		206	405		1115	1550	
1 - 2				0	0		0	0		0	0	
2 - 1	882	1111		27	34		206	405		1115	1550	
2 - 2				0	0		0	0		0	0	
3 - 1	882	1111		27	34	6	235	404		1144	1549	
3 - 2				0	0		0	0		0	0	
3 - 3	419	530		13	16		272	374		704	920	
4 - 1	214	386		7	12		77	299		298	697	
4 - 2	822	1109		25	34		54	230		901	1373	
4 - 3	265	146		8	4		374	266		647	416	
4 - 4	570	695		17	21		283	145		870	861	
4 - 5	150	317		5	10		2	4		157	331	
5 - 1	35	64		1	2		2	7		38	73	
5 - 2	654	577		20	18		67	145		741	740	
5 - 3	122	157		4	5		15	13		141	175	
5 - 4	72	90		2	3		3	14		77	107	
5 - 5	524	703		16	21		80	109		620	833	
5 - 6	124	59		4	2		37	27		165	88	
5 - 7	205	98		6	3		11	8		222	109	
5 - 8	319	158		10	5		76	41		405	204	
5 - 9	103	210		3	6		12	7		118	223	
6 - 1	28	28		1	1		0	0		29	29	
6 - 2	73	269		2	8		0	0		75	277	
6 - 3	565	374		17	11		129	83		711	468	
7 - 1	32	28	50	1	1	2	56	209	139	89	238	190
7 - 2	803	813	818	24	25	25	256	510	332	1083	1348	1175
7 - 3	242	253	120	7	8	4	38	32	32	287	293	156
7 - 4	424	418	319	13	13	10	91	51	69	528	482	397
8 - 1				0	0		0	0		0	0	
8 - 2				0	0		0	0		0	0	
8 - 3				0	0		0	0		0	0	
8 - 4				0	0		0	0		0	0	
8 - 5	145	249		4	8		178	133		327	390	
8 - 6	274	281		8	9		97	256		379	546	
9 - 1				0	0		0	0		0	0	
9 - 2				0	0		0	0		0	0	
9 - 3				0	0		0	0		0	0	
10 - 1				0	0		0	0		0	0	
10 - 2				0	0		0	0		0	0	
11 - 1	81	130		2	4		28	124		111	258	
11 - 2	67	151		2	5		2	14		71	170	
11 - 3	84	108		3	3		2	3		89	114	
11 - 4	72	92		2	3		2	7		76	102	
11 - 5	636	744		19	23		113	140		768	907	
11 - 6	679	723		21	22		68	140		768	885	
11 - 7	78	72		2	2		0	5		80	79	
12 - 1	143	103		4	3		0	0		147	106	
12 - 2	162	240		5	7		31	141		198	388	
12 - 3	70	149		2	5		0	0		72	154	
12 - 4	35	75		1	2		0	0		36	77	
13 - 1	39	113	54	1	3	2	3	5	-1	43	121	55

MOVEMENT NUMBER	REVISED NETWORK 1989 EXISTING VOLUMES AM	PM	SAT	GROWTH VOLUME @ 0.5%/YR AM	PM	SAT	OTHER DEVELOPMENTS AM	PM	SAT	REVISED NETWORK 1995 NO-BUILD VOLUMES AM	PM	SAT
13 - 2	27	69	80	1	2	2	0	0	0	28	71	82
13 - 3	13	20	30	0	1	1	0	0	0	13	21	31
13 - 4	412	305	317	13	9	10	166	86	72	591	400	399
13 - 5	549	696	559	17	21	17	82	371	247	648	1088	823
13 - 6	266	230	261	8	7	8	28	136	116	302	373	385
14 - 1	8	107	47	0	3	1	0	0	0	8	110	48
14 - 2				0	0	0	0	0	0	0	0	0
14 - 3				0	0	0	0	0	0	0	0	0
14 - 4				0	0	0	0	0	0	0	0	0
14 - 5	216	344	282	7	10	9	202	144	99	425	498	390
14 - 6				0	0	0	0	0	0	0	0	0
14 - 7	198	59	83	6	2	3	0	0	0	204	61	86
15 - 1	148	223	178	4	7	5	0	0	0	152	230	183
15 - 2	164	69	84	5	2	3	0	0	0	169	71	87
15 - 3	261	256	263	8	8	8	166	86	72	435	350	343
15 - 4	102	111	103	3	3	3	203	154	100	308	269	206
15 - 5	22	50	18	1	2	1	1	10	0	24	62	19
16 - 1	148	180	175	4	5	5	0	-9	2	152	176	182
16 - 2	124	80	30	4	2	1	0	0	0	128	82	31
16 - 3	95	50	116	3	2	4	0	0	0	98	52	120
16 - 4	17	15	10	1	0	0	0	0	0	18	15	10
16 - 5	200	242	185	6	7	6	103	75	60	309	324	251
16 - 6	66	49	86	2	1	3	64	21	12	132	71	101
16 - 7	0	43	3	0	1	0	0	0	0	0	44	3
16 - 8	17	109	30	1	3	1	0	0	0	18	112	31
16 - 9	16	50	12	0	2	0	0	0	0	16	52	12
17 - 1	17	44	58	1	1	2	3	1	1	21	46	61
17 - 2	37	84	122	1	3	4	9	9	0	47	96	126
17 - 3	4	8	1	0	0	0	0	0	0	4	8	1
17 - 4	261	277	228	8	8	7	84	39	34	353	324	269
17 - 5	50	70	85	2	2	3	16	35	25	68	107	113
18 - 1	218	360	210	7	11	6	47	99	-7	272	470	209
18 - 2	93	298	129	3	9	4	8	38	-3	104	345	130
18 - 3	24	61	91	1	2	3	10	31	-3	35	94	91
18 - 4	551	686	577	17	21	18	78	330	220	646	1037	815
18 - 5	25	79	62	1	2	2	10	40	27	36	121	91
18 - 6	100	100	30	3	3	1	193	132	100	296	235	131
19 - 1	189	350	235	6	11	7	24	21	6	219	382	248
19 - 2	104	160	189	3	5	6	0	0	0	107	165	195
19 - 3	83	158	116	3	5	4	64	21	12	150	184	132
19 - 4	63	116	79	2	4	2	58	10	11	123	130	92
19 - 5	263	160	132	8	5	4	0	-10	-1	271	155	135
20 - 1	52	82	35	2	2	1	2	11	2	56	95	38
20 - 2	156	345	165	5	10	5	16	16	6	177	371	176
20 - 3	39	71	88	1	2	3	17	40	25	57	113	116
20 - 4	48	83	119	1	3	4	8	5	0	57	91	123
20 - 5	89	82	140	3	2	4	0	0	0	92	84	144
20 - 6	4	8	1	0	0	0	0	0	0	4	8	1
21 - 1	72	35		2	1		0	0		74	36	
21 - 2	675	1177		21	36		37	117		733	1330	
21 - 3	12	7		0	0		67	14		79	21	

MOVEMENT NUMBER	REVISED NETWORK 1989 EXISTING VOLUMES AM	PM	SAT	GROWTH VOLUME @ 0.5%/YR AM	PM	SAT	OTHER DEVELOPMENTS AM	PM	SAT	REVISED NETWORK 1995 NO-BUILD VOLUMES AM	PM	SAT
21 - 3A	70	65		2	2		65	41		137	108	
21 - 4	70	34		2	1		0	0		72	35	
21 - 4A	20	25		1	1		100	80		121	106	
21 - 5	683	190		21	6		271	59		975	255	
21 - 6	284	207		9	6		0	0		293	213	
21 - 7	32	12		1	0		0	0		33	12	
21 - 8	90	132		3	4		38	17		131	153	
21 - 9	465	515		14	16		70	255		549	786	
21 - 10	89	82		3	2		0	2		92	86	
21 - 11	125	317		4	10		41	152		170	479	
21 - 12	59	37		2	1		29	7		90	45	
21 - 12A	10	10		0	0		28	12		38	22	
21 - 13	492	679		15	21		5	13		512	713	
21 - 14	18	13		1	0		0	0		19	13	
22 - 1				0	0	0	0	0	0	0	0	0
22 - 2	79	202	164	2	6	5	3	5	-1	84	213	168
22 - 3	145	249	165	4	8	5	199	139	100	348	396	270

MOVEMENT NUMBER	110-120 TREMONT ST			PAVILLION @ PRK SQ			PARKSIDE PROJECTS			90 TREMONT			600 WASHINGTON ST		
	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
1 - 1	16	95	19	3	4	2	3	20	19	14	68	35	2	1	1
1 - 2															
2 - 1	16	95	19	3	4	2	3	20	19	14	68	35	2	1	1
2 - 2															
3 - 1	16	95	19	3	4	2	32	19	20	14	68	35	2	1	1
3 - 2															
3 - 3													0	20	18
4 - 1	0	3	1				8	2	5	3	19	5	0	14	13
4 - 2	14	85	16	3	4	2	14	11	1	9	36	20	0	6	5
4 - 3	2	7	2				10	6	4	2	13	10	2	1	1
4 - 4	20	3	3				1	4	3				9	5	6
4 - 5															
5 - 1															
5 - 2	5	32	7	4	13	9	8	7	7	5	19	15			
5 - 3							0	3	3				15	10	11
5 - 4															
5 - 5				8	6	7									
5 - 6							1	4	5	3	0	4	32	23	25
5 - 7				2	2	1									
5 - 8	13	2	2				1	3	3	1	0	3	19	12	15
5 - 9															
6 - 1															
6 - 2															
6 - 3	13	2	2				2	10	11	5	0	11	66	45	51
7 - 1							1	4	3						
7 - 2	22	10	5				10	6	4	2	13	10	11	6	7
7 - 3							2	10	11						
7 - 4	13	2	2							5	0	11	66	45	51
8 - 1															
8 - 2															
8 - 3															
8 - 4															
8 - 5							0	1	3				0	20	18
8 - 6							3	14	14						
9 - 1															
9 - 2															
9 - 3															
10 - 1															
10 - 2															
11 - 1							4	2	2				1	41	47
11 - 2							1	1	0				0	12	14
11 - 3							1	0	0						
11 - 4															
11 - 5				8	6	7	1	4	5	3	0	4	32	23	25
11 - 6	6	30	7	4	13	9	8	7	7	5	19	15			
11 - 7		2													
12 - 1															
12 - 2							5	3	2				1	53	61
12 - 3															
12 - 4															
13 - 1															

MOVEMENT NUMBER	110-120 TREMONT ST			PAVILLION @ PRK SQ			PARKSIDE PROJECTS			90 TREMONT			600 WASHINGTON ST		
	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
13 - 2															
13 - 3															
13 - 4	33	5	5							5	0	11			
13 - 5	2	7	2				5	3	2	2	13	10	1	29	31
13 - 6							5	3	2				1	53	61
14 - 1															
14 - 2															
14 - 3															
14 - 4															
14 - 5							0	1	3				15	10	10
14 - 6															
14 - 7															
15 - 1															
15 - 2															
15 - 3	33	5	5							5	0	11			
15 - 4							0	1	3				15	10	10
15 - 5															
16 - 1							0	1	3						
16 - 2															
16 - 3															
16 - 4															
16 - 5	33	5	5							5	0	11			
16 - 6															
16 - 7															
16 - 8															
16 - 9															
17 - 1															
17 - 2															
17 - 3															
17 - 4	33	5	5							5	0	11			
17 - 5															
18 - 1															
18 - 2															
18 - 3															
18 - 4	2	7	2				5	3	2	2	13	10	1	27	29
18 - 5													0	2	2
18 - 6													15	10	10
19 - 1															
19 - 2															
19 - 3															
19 - 4															
19 - 5															
20 - 1															
20 - 2															
20 - 3															
20 - 4															
20 - 5															
20 - 6															
21 - 1															
21 - 2															
21 - 3															

MOVEMENT NUMBER	110-120 TREMONT ST AM	PM	SAT	PAVILLION @ PRK SQ AM	PM	SAT	PARKSIDE PROJECTS AM	PM	SAT	90 TREMONT AM	PM	SAT	600 WASHINGTON ST AM	PM	SAT
21 - 3A							0	1	3				15	10	10
21 - 4															
21 - 4A															
21 - 5	34	8	7							20	6	10			
21 - 6															
21 - 7															
21 - 8	1	4	1				1	1	0	0	3	2			
21 - 9	1	3	1				4	2	2	2	10	8	1	25	27
21 - 10													0	2	2
21 - 11															
21 - 12															
21 - 12A															
21 - 13															
21 - 14															
22 - 1															
22 - 2															
22 - 3							0	1	3				15	10	10

MOVEMENT NUMBER	PARCEL R3-R3A			ONE BOWDOIN SQUARE			64-74 FRANKLIN ST			FORTY FRANKLIN			146 BOYLSTON		
	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
1 - 1				2	9	2	2	8	3	6	32	4	2	5	6
1 - 2															
2 - 1				2	9	2	2	8	3	6	32	4	2	5	6
2 - 2															
3 - 1				2	9	2	2	8	3	6	32	4	2	5	6
3 - 2															
3 - 3															
4 - 1				0	1	0	0	2	0	1	3	0	2	5	6
4 - 2				2	7	2	2	5	3	4	27	3			
4 - 3				0	1	0	0	1	0	1	3	1			
4 - 4							1	1	1	4	1	1	2	5	5
4 - 5													2	4	4
5 - 1	2	7	6												
5 - 2	0	3	3	1	4	1	0	1	1	2	14	2	2	2	3
5 - 3										1	0	0			
5 - 4	0	4	5												
5 - 5													1	2	2
5 - 6										1	0	0			
5 - 7	6	3	5												
5 - 8							1	0	0	3	1	1			
5 - 9	12	7	10												
6 - 1															
6 - 2															
6 - 3							1	0	0	5	1	1			
7 - 1															
7 - 2				0	1	0	1	2	1	5	3	2	2	5	5
7 - 3															
7 - 4							1	0	0	5	1	1			
8 - 1															
8 - 2															
8 - 3															
8 - 4															
8 - 5															
8 - 6															
9 - 1															
9 - 2															
9 - 3															
10 - 1															
10 - 2															
11 - 1															
11 - 2															
11 - 3															
11 - 4	2	7	6												
11 - 5	0	4	5							1	0	0	1	2	2
11 - 6				1	4	1	0	1	1	2	14	2	2	2	3
11 - 7	0	3	3												
12 - 1															
12 - 2															
12 - 3															
12 - 4															
13 - 1															

MOVEMENT NUMBER	PARCEL R3-R3A			ONE BOWDOIN SQUARE			64-74 FRANKLIN ST			FORTY FRANKLIN			146 BOYLSTON		
	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
13 - 2															
13 - 3															
13 - 4							2	1	1	9	2	2			
13 - 5				0	1	0	0	1	0	1	2	1	2	5	5
13 - 6															
14 - 1															
14 - 2															
14 - 3															
14 - 4															
14 - 5															
14 - 6															
14 - 7															
15 - 1															
15 - 2															
15 - 3							2	1	1	9	2	2			
15 - 4															
15 - 5															
16 - 1															
16 - 2															
16 - 3															
16 - 4															
16 - 5							2	1	1	9	2	2			
16 - 6															
16 - 7															
16 - 8															
16 - 9															
17 - 1															
17 - 2										1	8	0			
17 - 3															
17 - 4							2	1	1	9	2	2			
17 - 5															
18 - 1							0	1	0	0	4	0			
18 - 2										0	4	0			
18 - 3															
18 - 4				0	1	0	0	1	0	1	3	1	2	5	5
18 - 5															
18 - 6															
19 - 1							0	1	0	0	8	0			
19 - 2															
19 - 3															
19 - 4															
19 - 5															
20 - 1							0	1	0	1	5	0			
20 - 2							0	1	0	0	4	0			
20 - 3										1	5	0			
20 - 4										0	4	0			
20 - 5															
20 - 6															
21 - 1															
21 - 2															
21 - 3															

MOVEMENT NUMBER	PARCEL R3-R3A			ONE BOWDOIN SQUARE			64-74 FRANKLIN ST			FORTY FRANKLIN			146 BOYLSTON		
	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
21 - 3A															
21 - 4															
21 - 4A															
21 - 5							9	3	2	43	8	6			
21 - 6															
21 - 7															
21 - 8															
21 - 9				0	1	0				1	3	1	2	5	5
21 - 10															
21 - 11							0	2	0	0	4	0			
21 - 12															
21 - 12A															
21 - 13															
21 - 14															
22 - 1															
22 - 2															
22 - 3															

MOVEMENT NUMBER	73 TREMONT STREET			45 PROVIDENCE ST			125 SUMMER STREET			PARCEL C-2			DON BOSCO		
	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
1 - 1	7	46	8	3	10	2									
1 - 2															
2 - 1	7	46	8	3	10	2									
2 - 2															
3 - 1	7	46	8	3	10	2									
3 - 2															
3 - 3															
4 - 1	1	7	1	1	1	0									
4 - 2	4	32	6	2	9	2									
4 - 3	2	7	1												
4 - 4							15	4	3						
4 - 5															
5 - 1															
5 - 2	2	15	3				15	4	3	6	22	26	3	6	3
5 - 3															
5 - 4										3	10	13			
5 - 5							3	15	3	4	12	15	54	41	40
5 - 6															
5 - 7													3	3	2
5 - 8	3	1	1	2	1	1									
5 - 9															
6 - 1															
6 - 2															
6 - 3	3	1	1	2	1	1									
7 - 1															
7 - 2	2	7	1				15	4	3						
7 - 3	3	1	1												
7 - 4				2	1	1									
8 - 1															
8 - 2															
8 - 3															
8 - 4															
8 - 5															
8 - 6															
9 - 1															
9 - 2															
9 - 3															
10 - 1															
10 - 2															
11 - 1															
11 - 2															
11 - 3															
11 - 4															
11 - 5							3	15	3	7	22	28	54	41	40
11 - 6	2	15	3				15	4	3	6	22	26	3	6	3
11 - 7															
12 - 1															
12 - 2															
12 - 3															
12 - 4															
13 - 1															

MOVEMENT NUMBER	73 TREMONT STREET			45 PROVIDENCE ST			125 SUMMER STREET			PARCEL C-2			DON BOSCO		
	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
13 - 2															
13 - 3															
13 - 4	3	1	1	3	1	1									
13 - 5	2	7	1				15	4	3						
13 - 6															
14 - 1															
14 - 2															
14 - 3															
14 - 4															
14 - 5															
14 - 6															
14 - 7															
15 - 1															
15 - 2															
15 - 3	3	1	1	3	1	1									
15 - 4															
15 - 5															
16 - 1															
16 - 2															
16 - 3															
16 - 4															
16 - 5	3	1	1	3	1	1									
16 - 6															
16 - 7															
16 - 8															
16 - 9															
17 - 1	3	1	1												
17 - 2							8	1	0						
17 - 3															
17 - 4				3	1	1									
17 - 5															
18 - 1							17	3	0						
18 - 2	0	2	0	0	1	0									
18 - 3															
18 - 4	2	7	1				15	4	3						
18 - 5															
18 - 6															
19 - 1	0	2	0	0	1	0	17	3	0						
19 - 2															
19 - 3															
19 - 4															
19 - 5															
20 - 1	0	3	1	1	2	1									
20 - 2	0	2	0	0	1	0	9	2	0						
20 - 3															
20 - 4							8	1	0						
20 - 5															
20 - 6															
21 - 1															
21 - 2							16	91	17	2	6	8	16	12	11
21 - 3							49	10	9						

MOVEMENT NUMBER	73 TREMONT STREET			45 PROVIDENCE ST			125 SUMMER STREET			PARCEL C-2			DON BOSCO		
	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
21 - 3A															
21 - 4															
21 - 4A															
21 - 5	23	5	5	17	5	4	65	14	12						
21 - 6															
21 - 7															
21 - 8							32	7	3						
21 - 9	2	7	1												
21 - 10															
21 - 11															
21 - 12							15	4	3						
21 - 12A															
21 - 13										2	7	8	3	6	3
21 - 14															
22 - 1															
22 - 2															
22 - 3															

MOVEMENT NUMBER	KINGSTON-BEDFORD AM	KINGSTON-BEDFORD PM	KINGSTON-BEDFORD SAT	COMMONWEALTH CENTER AM	COMMONWEALTH CENTER PM	COMMONWEALTH CENTER SAT	295 DEVONSHIRE AM	295 DEVONSHIRE PM	295 DEVONSHIRE SAT	POST OFFICE SQUARE GARAGE AM	POST OFFICE SQUARE GARAGE PM	POST OFFICE SQUARE GARAGE SAT
1 - 1	2	1	1	142	93	76	0	2	0	2	11	3
1 - 2												
2 - 1	2	1	1	142	93	76	0	2	0	2	11	3
2 - 2												
3 - 1	2	1	1	142	93	76	0	2	0	2	11	3
3 - 2												
3 - 3	6	16	-3	266	338	245						
4 - 1	4	24	-1	55	205	135	0	2	0	2	11	3
4 - 2	0	8	2									
4 - 3	2	1	1	353	226	186						
4 - 4	23	8	6	165	107	88	2	0	0	41	7	11
4 - 5												
5 - 1												
5 - 2										14	3	4
5 - 3	-1	0	-2									
5 - 4												
5 - 5	7	10	-2							3	23	6
5 - 6												
5 - 7												
5 - 8				33	21	20						
5 - 9												
6 - 1												
6 - 2												
6 - 3	-1	2	2	33	21	20						
7 - 1				55	205	135						
7 - 2	25	9	7	118	437	287	2	0	0	41	7	11
7 - 3				33	21	20						
7 - 4	-1	2	2									
8 - 1												
8 - 2												
8 - 3												
8 - 4												
8 - 5				178	112	90						
8 - 6	6	16	-3	88	226	155						
9 - 1												
9 - 2												
9 - 3												
10 - 1												
10 - 2												
11 - 1	1	1	0	22	80	53						
11 - 2	1	1	-1									
11 - 3	1	3	0									
11 - 4												
11 - 5										3	23	6
11 - 6										14	3	4
11 - 7												
12 - 1												
12 - 2	3	5	-1	22	80	53						
12 - 3												
12 - 4												
13 - 1	3	5	-1									

MOVEMENT NUMBER	KINGSTON-BEDFORD			COMMONWEALTH CENTER			295 DEVONSHIRE			POST OFFICE SQUARE GARAGE		
	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
13 - 2												
13 - 3												
13 - 4	64	11	12	18	60	39	2	0	0	27	5	7
13 - 5	-40	0	-3	78	297	195				14	2	4
13 - 6				22	80	53						
14 - 1												
14 - 2												
14 - 3												
14 - 4												
14 - 5	9	21	-4	178	112	90						
14 - 6												
14 - 7												
15 - 1												
15 - 2												
15 - 3	64	11	12	18	60	39	2	0	0	27	5	7
15 - 4	10	31	-3	178	112	90						
15 - 5	1	10	0									
16 - 1	0	-10	-1									
16 - 2												
16 - 3												
16 - 4												
16 - 5	1	0	0	18	60	39	2	0	0	27	5	7
16 - 6	64	21	12									
16 - 7												
16 - 8												
16 - 9												
17 - 1												
17 - 2												
17 - 3												
17 - 4	1	0	0	4	25	14				27	5	7
17 - 5				14	35	25	2	0	0			
18 - 1	29	86	-12				1	5	0			
18 - 2	8	31	-3									
18 - 3	10	31	-3									
18 - 4	-40	0	-3	88	259	170						
18 - 5				10	38	25						
18 - 6	0	10	0	178	112	90						
19 - 1	6	1	1				1	5	0			
19 - 2												
19 - 3	64	21	12									
19 - 4	58	10	11									
19 - 5	0	-10	-1									
20 - 1												
20 - 2	6	1	1				1	5	0			
20 - 3				14	35	25	2	0	0			
20 - 4												
20 - 5												
20 - 6												
21 - 1												
21 - 2	0	-15	-4							3	23	6
21 - 3	18	4	3									

MOVEMENT NUMBER	KINGSTON-BEDFORD AM	KINGSTON-BEDFORD PM	KINGSTON-BEDFORD SAT	COMMONWEALTH CENTER AM	COMMONWEALTH CENTER PM	COMMONWEALTH CENTER SAT	295 DEVONSHIRE AM	295 DEVONSHIRE PM	295 DEVONSHIRE SAT	POST OFFICE SQUARE GARAGE AM	POST OFFICE SQUARE GARAGE PM	POST OFFICE SQUARE GARAGE SAT
21 - 3A				50	30	25						
21 - 4												
21 - 4A	0	10	0	100	70	57						
21 - 5	17	2	9				5	1	0	38	7	10
21 - 6												
21 - 7												
21 - 8	-10	0	-1							14	2	4
21 - 9	11	21	-6	46	178	117						
21 - 10												
21 - 11	18	60	-6	22	81	53	1	5	0			
21 - 12										14	3	4
21 - 12A				28	12	8						
21 - 13												
21 - 14												
22 - 1												
22 - 2	3	5	-1									
22 - 3	6	16	-3	178	112	90						

Boston Crossing Trip Generation

Proposed and As-of-Right Project

Boston Crossing:Preferred

Land Use	Size	Auto Trips In	Auto Trips Out	Auto Trips Total
Office	1,449,000 sf			
AM Peak Hour		472	73	546
PM Peak Hour		82	419	500
Average Daily		1488	1488	2975
Sat Peak Hour		78	66	144
Retail	480,900 sf			
AM Peak Hour		79	29	108
PM Peak Hour		205	231	437
Average Daily		2419	2419	4838
Sat Peak Hour		278	268	546
Hotel	0 Rooms			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		1	0	1
Daycare	12,000 sf			
AM Peak Hour		20	18	38
PM Peak Hour		19	22	41
Average Daily		113	113	226
Sat Peak Hour				
Health Club	55,000 sf			
AM Peak Hour		38	10	48
PM Peak Hour		23	34	56
Average Daily		455	455	910
Sat Peak Hour		5	7	12
Gallery/Museum	10,000 sf			
AM Peak Hour		0	0	0
PM Peak Hour		3	4	7
Average Daily		20	20	39
Sat Peak Hour		6	8	14
Theatre	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Residential/Condo	0 Units			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Total				
AM Peak Hour		610	130	739
PM Peak Hour		332	709	1041
Average Daily		4495	4495	8990
Sat Peak Hour		368	349	717

Boston Crossing:Preferred

Land Use	Size	Walk Trips In	Walk Trips Out	Walk Trips Total	Transit Trips In	Transit Trips Out	Transit Trips Total
Office	1,449,000 sf						
AM Peak Hour		175	56	231	1585	214	1799
PM Peak Hour		49	144	193	254	1416	1670
Average Daily		663	683	1327	4868	4868	9735
Sat Peak Hour		25	21	46	265	226	491
Retail	480,900 sf						
AM Peak Hour		76	68	144	207	55	263
PM Peak Hour		375	423	799	444	500	944
Average Daily		4894	4894	9787	4976	4976	9951
Sat Peak Hour		612	588	1200	546	525	1071
Hotel	0 Rooms						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		1	0	1	1	0	1
Daycare	12,000 sf						
AM Peak Hour		24	22	47	96	85	181
PM Peak Hour		24	26	50	94	102	196
Average Daily		136	136	272	534	534	1067
Sat Peak Hour							
Health Club	55,000 sf						
AM Peak Hour		75	20	95	64	16	81
PM Peak Hour		46	66	113	38	57	95
Average Daily		918	918	1836	760	760	1520
Sat Peak Hour		10	14	24	8	12	20
Gallery/Museum	10,000 sf						
AM Peak Hour		0	0	0	1	0	1
PM Peak Hour		4	8	12	6	7	13
Average Daily		38	38	77	34	34	68
Sat Peak Hour		11	15	27	10	14	24
Theatre	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Residential/Condo	0 Units						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Total							
AM Peak Hour		350	166	516	1953	371	2324
PM Peak Hour		499	667	1166	835	2083	2918
Average Daily		6649	6649	13299	11171	11171	22342
Sat Peak Hour		659	639	1297	830	776	1606

Boston Crossing:As of Right Project

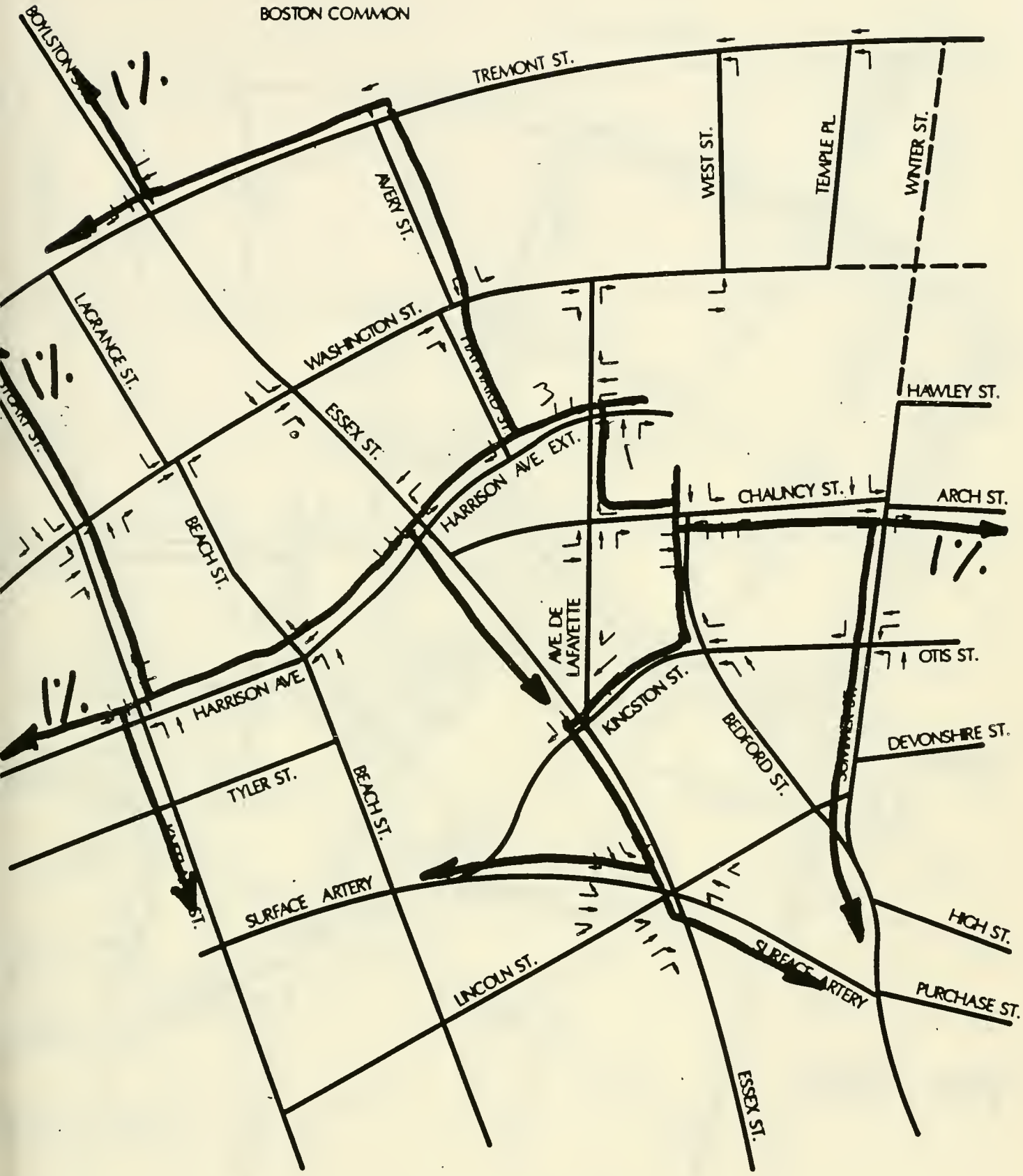
Land Use	Size	Auto Trips In	Auto Trips Out	Auto Trips Total
Office	1,635,865 sf			
AM Peak Hour		533	83	616
PM Peak Hour		92	473	565
Average Daily		1679	1679	3359
Sat Peak Hour		91	77	168
Retail	524,038 sf			
AM Peak Hour		86	32	118
PM Peak Hour		224	252	476
Average Daily		2636	2636	5272
Sat Peak Hour		303	292	595
Hotel	0 Rooms			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Daycare	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour				
Health Club	55,000 sf			
AM Peak Hour		38	10	48
PM Peak Hour		23	34	56
Average Daily		455	455	910
Sat Peak Hour		0	0	0
Gallery/Museum	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Theatre	0 sf			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Residential/Condo	0 Units			
AM Peak Hour		0	0	0
PM Peak Hour		0	0	0
Average Daily		0	0	0
Sat Peak Hour		0	0	0
Total				
AM Peak Hour		657	124	781
PM Peak Hour		338	758	1097
Average Daily		4771	4771	9541
Sat Peak Hour		394	369	763

Boston Crossing:As of Right Project

Land Use	Size	Walk Trips In	Walk Trips Out	Walk Trips Total	Transit Trips In	Transit Trips Out	Transit Trips Total
Office	1,635,865 sf						
AM Peak Hour		197	63	260	1789	242	2032
PM Peak Hour		55	163	218	287	1599	1886
Average Daily		749	749	1498	5495	5495	10991
Sat Peak Hour		29	25	54	310	264	574
Retail	524,038 sf						
AM Peak Hour		82	74	157	226	60	286
PM Peak Hour		409	461	870	484	545	1029
Average Daily		5333	5333	10665	5422	5422	10844
Sat Peak Hour		667	641	1308	595	572	1167
Hotel	0 Rooms						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Daycare	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour							
Health Club	55,000 sf						
AM Peak Hour		75	20	95	64	16	81
PM Peak Hour		46	66	113	38	57	95
Average Daily		918	918	1836	760	760	1520
Sat Peak Hour		0	0	0	0	0	0
Gallery/Museum	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Theatre	0 sf						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Residential/Condo	0 Units						
AM Peak Hour		0	0	0	0	0	0
PM Peak Hour		0	0	0	0	0	0
Average Daily		0	0	0	0	0	0
Sat Peak Hour		0	0	0	0	0	0
Total							
AM Peak Hour		355	157	512	2080	319	2398
PM Peak Hour		510	690	1201	808	2201	3009
Average Daily		7000	7000	13999	11677	11677	23355
Sat Peak Hour		696	665	1361	905	836	1741

Trip Distribution

Existing and Revised Network



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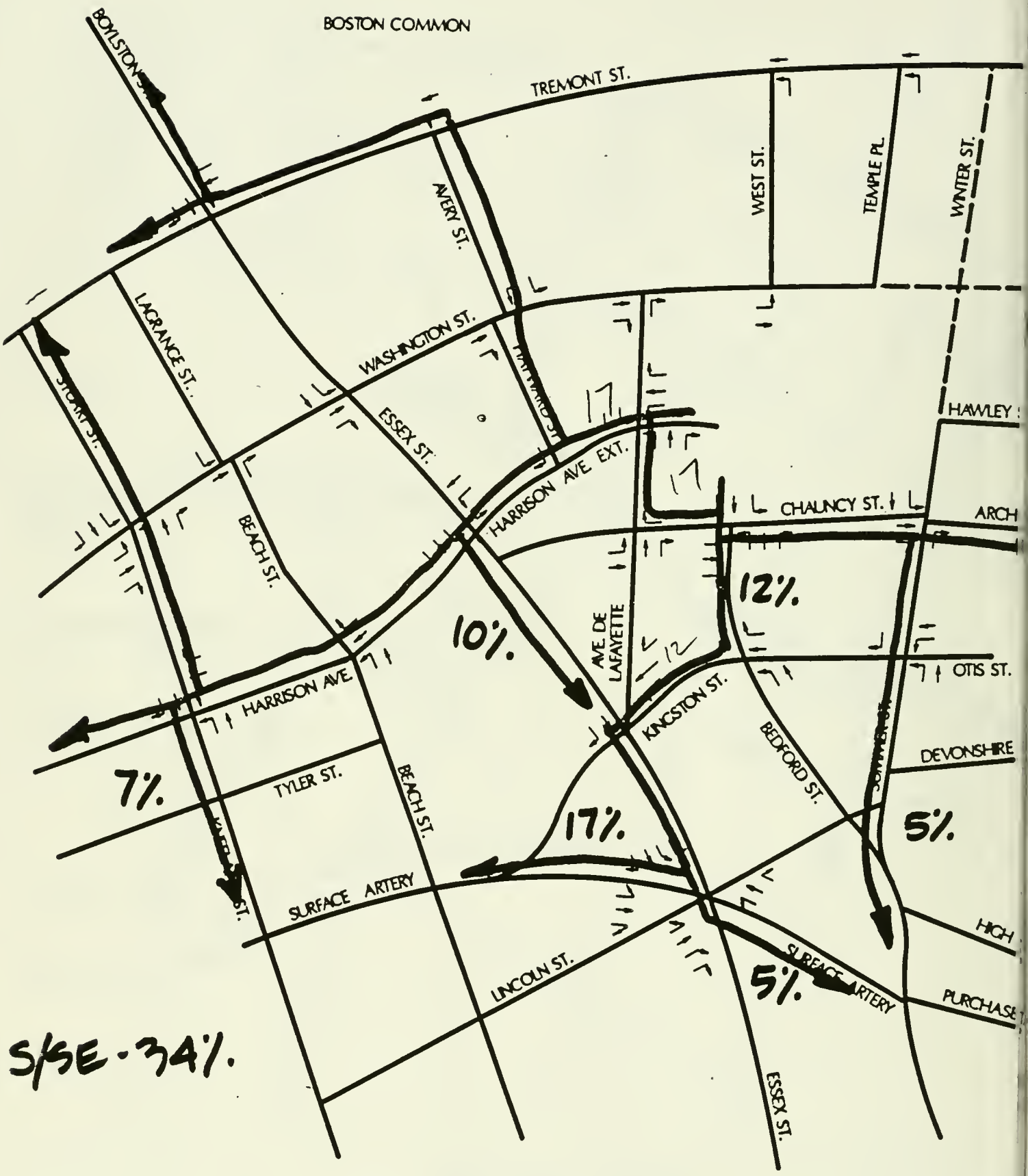
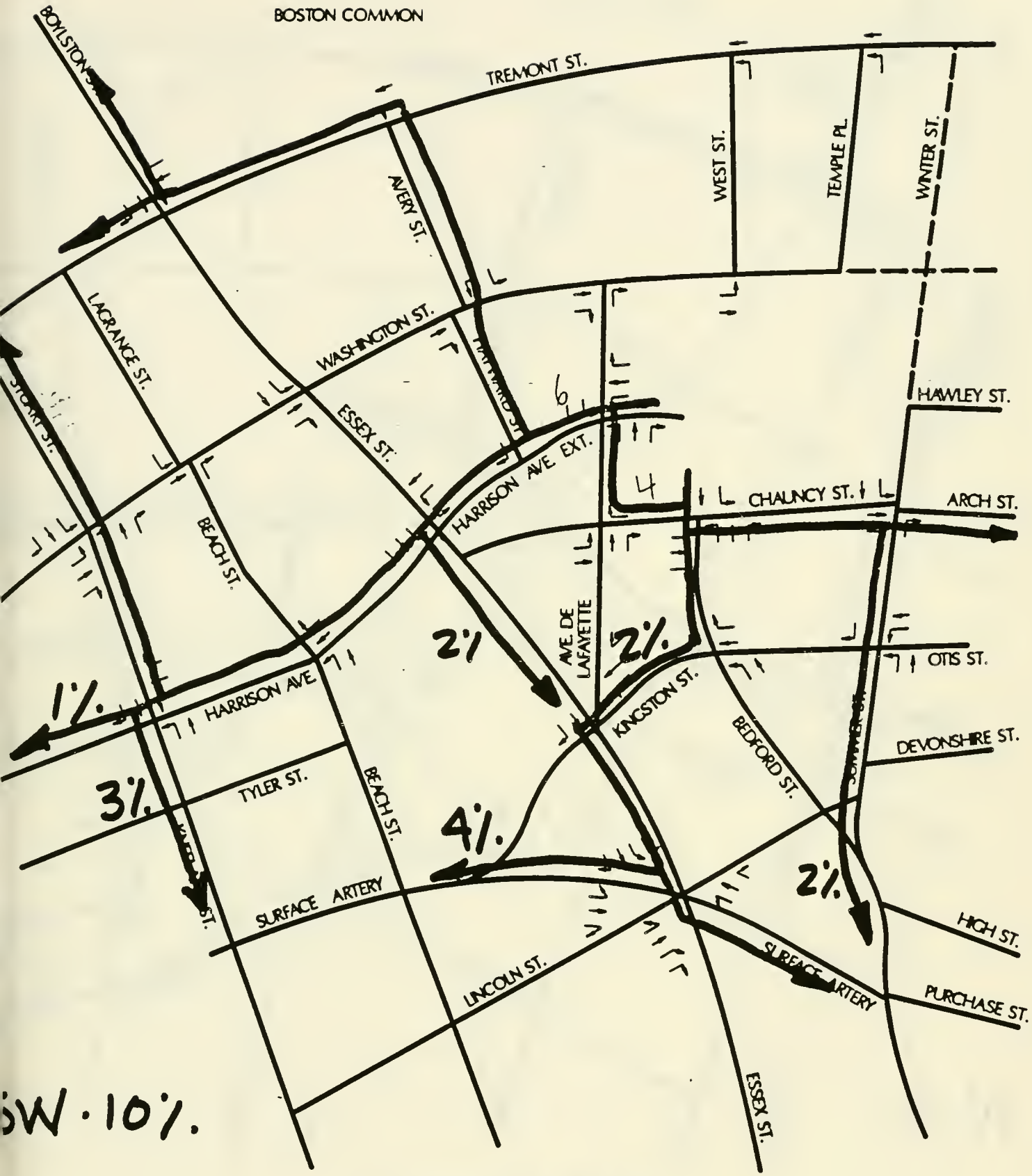
FROM SITE
EXISTING NETWORK

NOTE EXISTING NETWORK INCLUDES 1) REVERSAL OF HAYWARD/AVERY AND 2) CLOSURE OF AVE DE LAFAYETTE TO ALLOW CONSTRUCTION



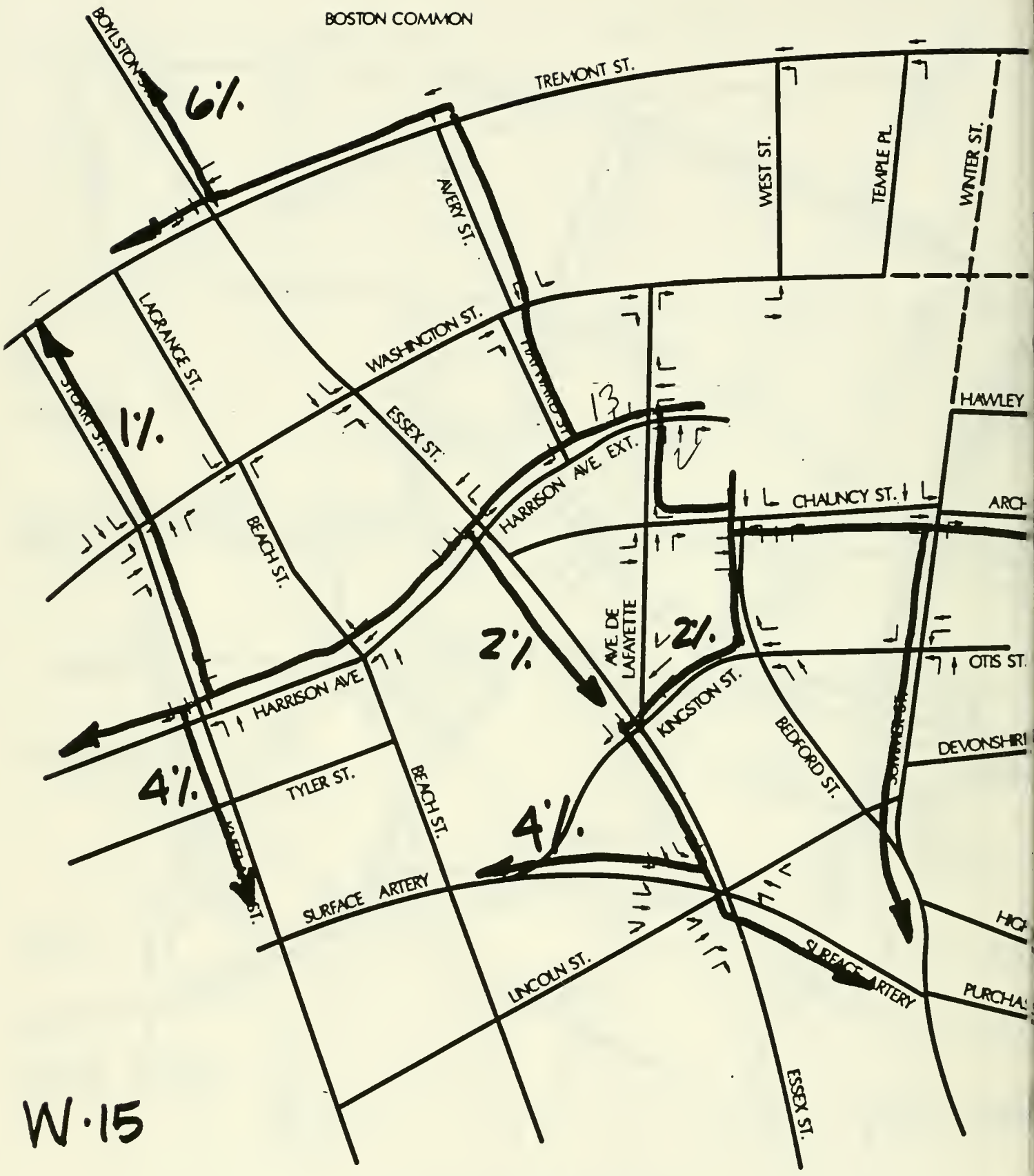
FROM SITE EXISTING NETWORK

NOTE EXISTING NETWORK INCLUDES 1) REVERSAL OF HAYWARD/AVERY AND 2) CLOSURE OF AVE DE LAFAYETTE TO ALLOW CONSTRUCTION



FROM SITE EXISTING NETWORK

NOTE EXISTING NETWORK INCLUDES 1) REVERSAL OF HAYWARD/AVERY AND 2) CLOSURE OF AVE DE LAFAYETTE TO ALLOW CONSTRUCTION



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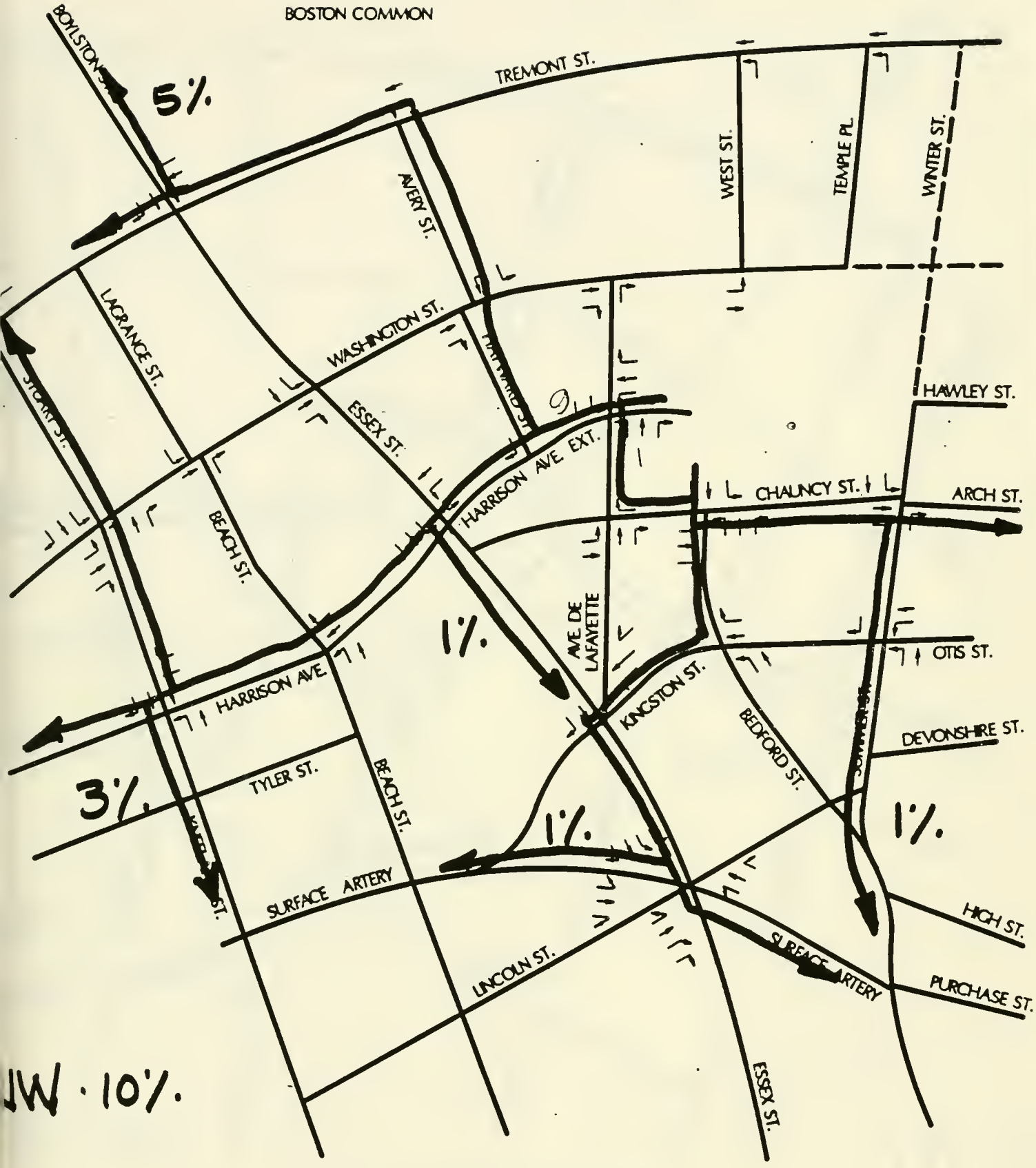
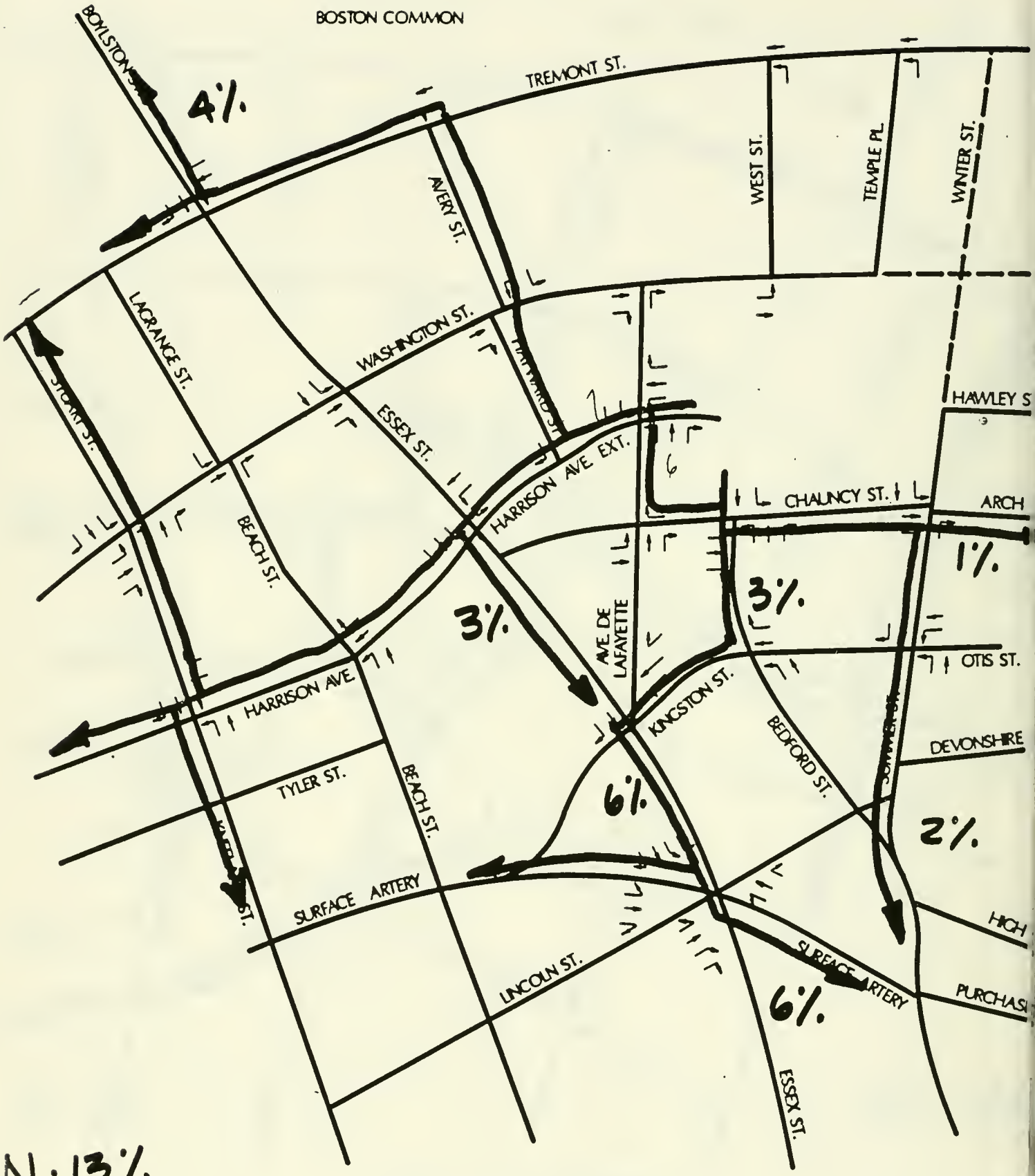
FROM SITE EXISTING NETWORK

NOTE EXISTING NETWORK INCLUDES 1) REVERSAL OF HAYWARD/AVERY AND 2) CLOSURE OF AVE DE LAFAYETTE TO ALLOW CONSTRUCTION



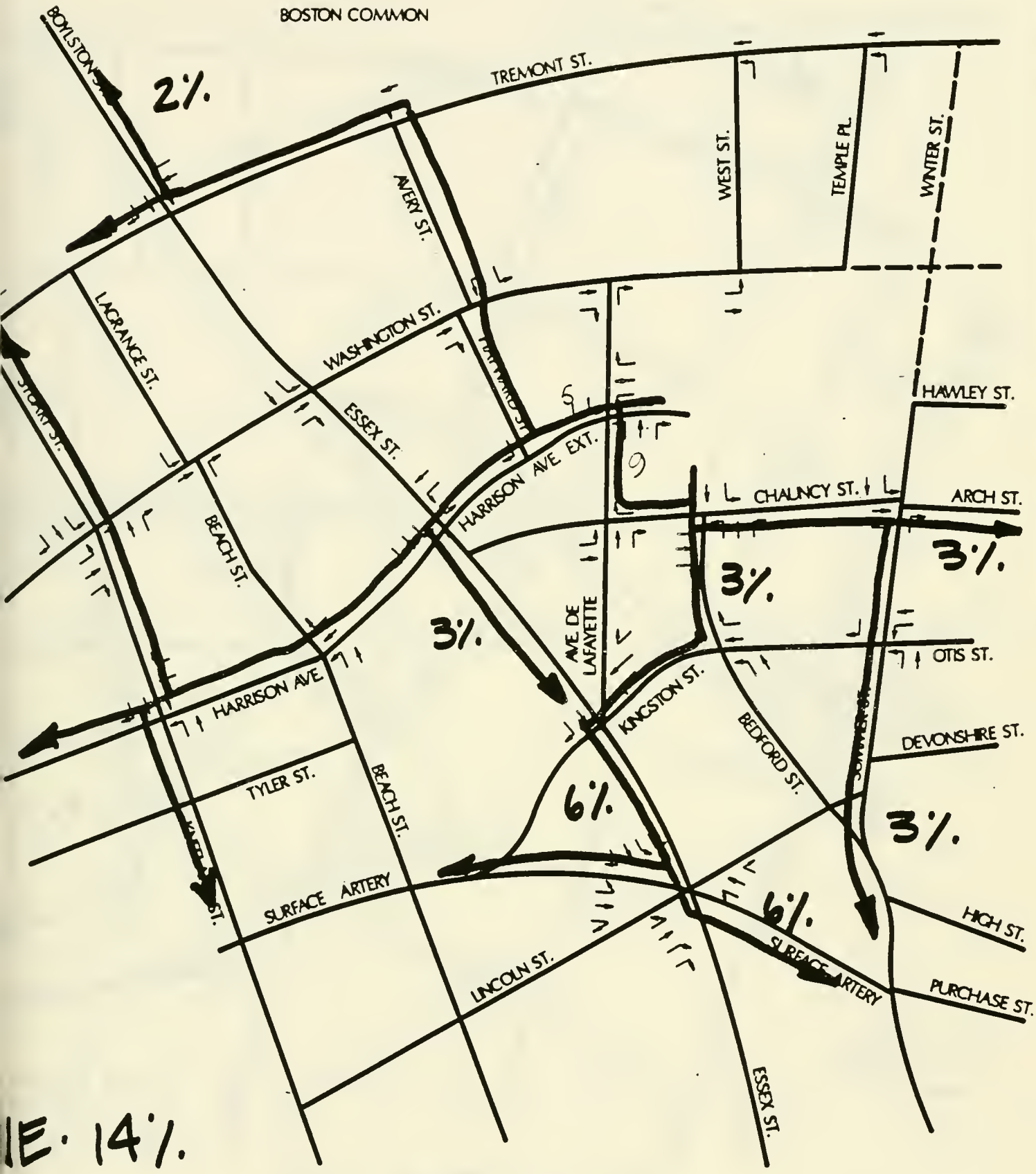
FROM SITE
EXISTING NETWORK

NOTE EXISTING NETWORK INCLUDES 1) REVERSAL OF HAYWARD/AVERLY AND 2) CLOSURE OF AVE DE LAFAYETTE TO ALLOW CONSTRUCTION



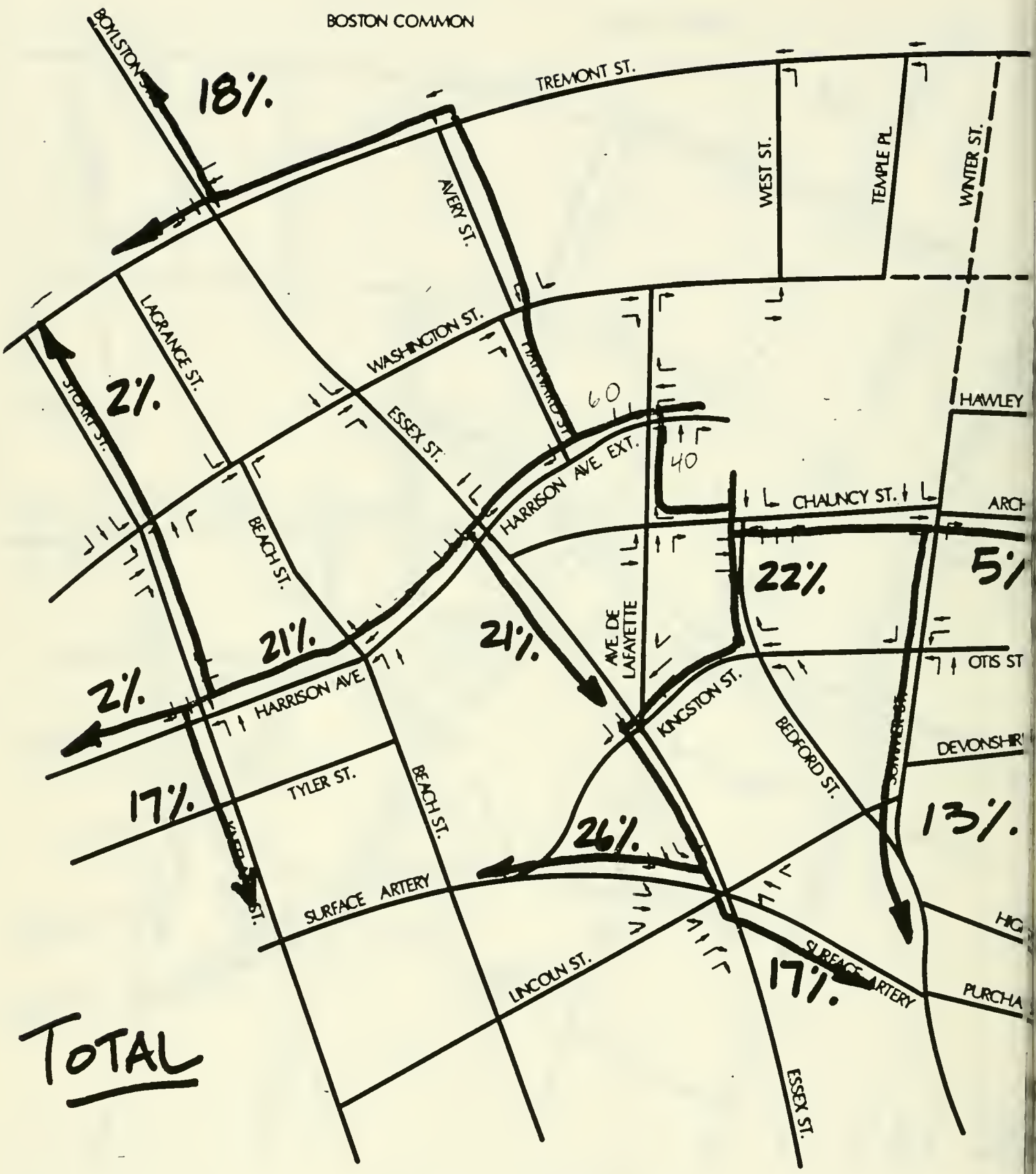
FROM SITE EXISTING NETWORK

NOTE EXISTING NETWORK INCLUDES 1) REVERSAL OF HAYWARD/AVERY AND 2) CLOSURE OF AVE DE LAFAYETTE TO ALLOW CONSTRUCTION



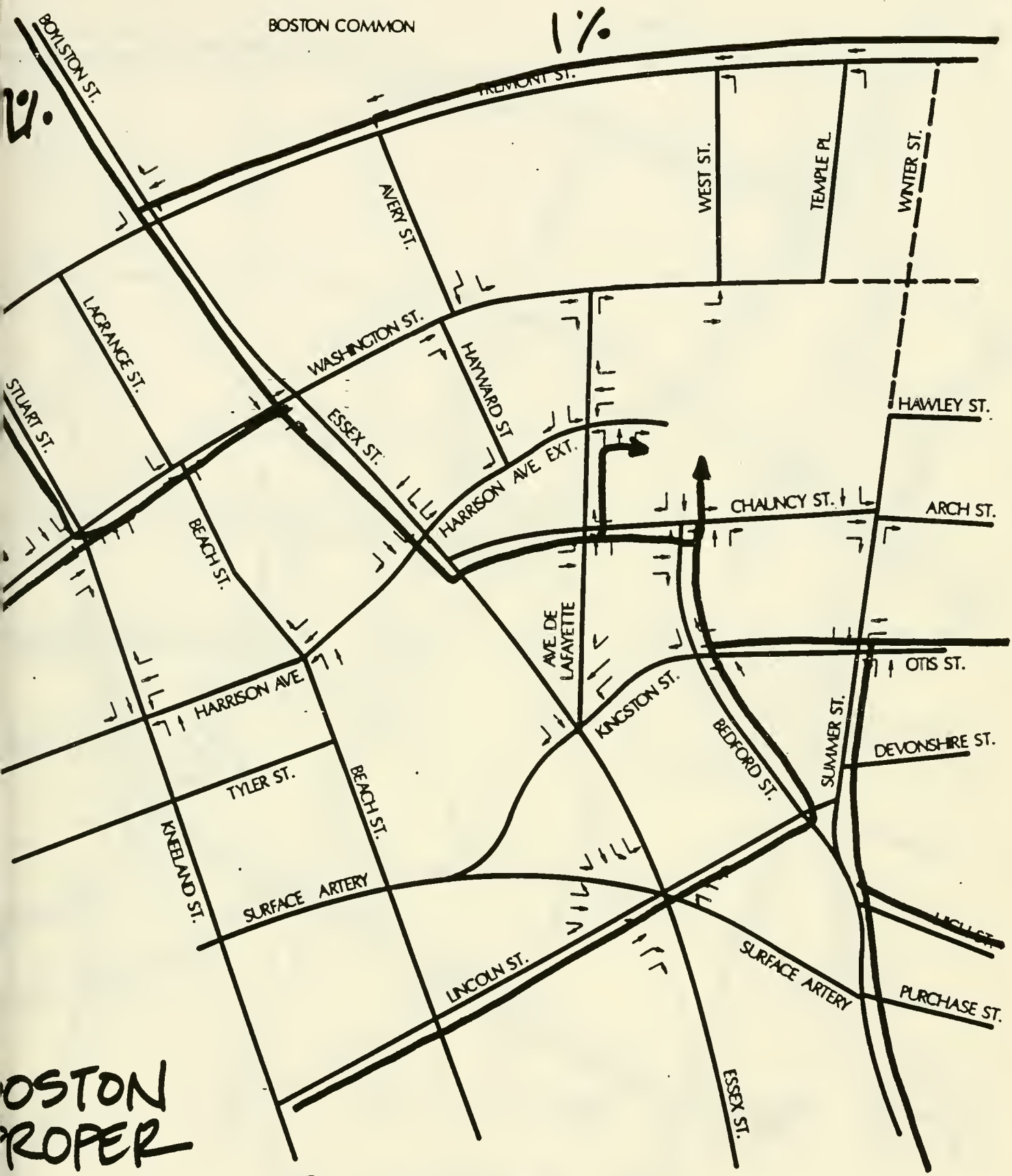
FROM SITE EXISTING NETWORK

NOTE EXISTING NETWORK INCLUDES 1) REVERSAL OF HAYWARD/AVERY AND 2) CLOSURE OF AVE DE LAFAYETTE TO ALLOW CONSTRUCTION



FROM SITE EXISTING NETWORK

NOTE EXISTING NETWORK INCLUDES 1) REVERSAL OF HAYWARD/AVERY AND 2) CLOSURE OF AVE DE LAFAYETTE TO ALLOW CONSTRUCTION



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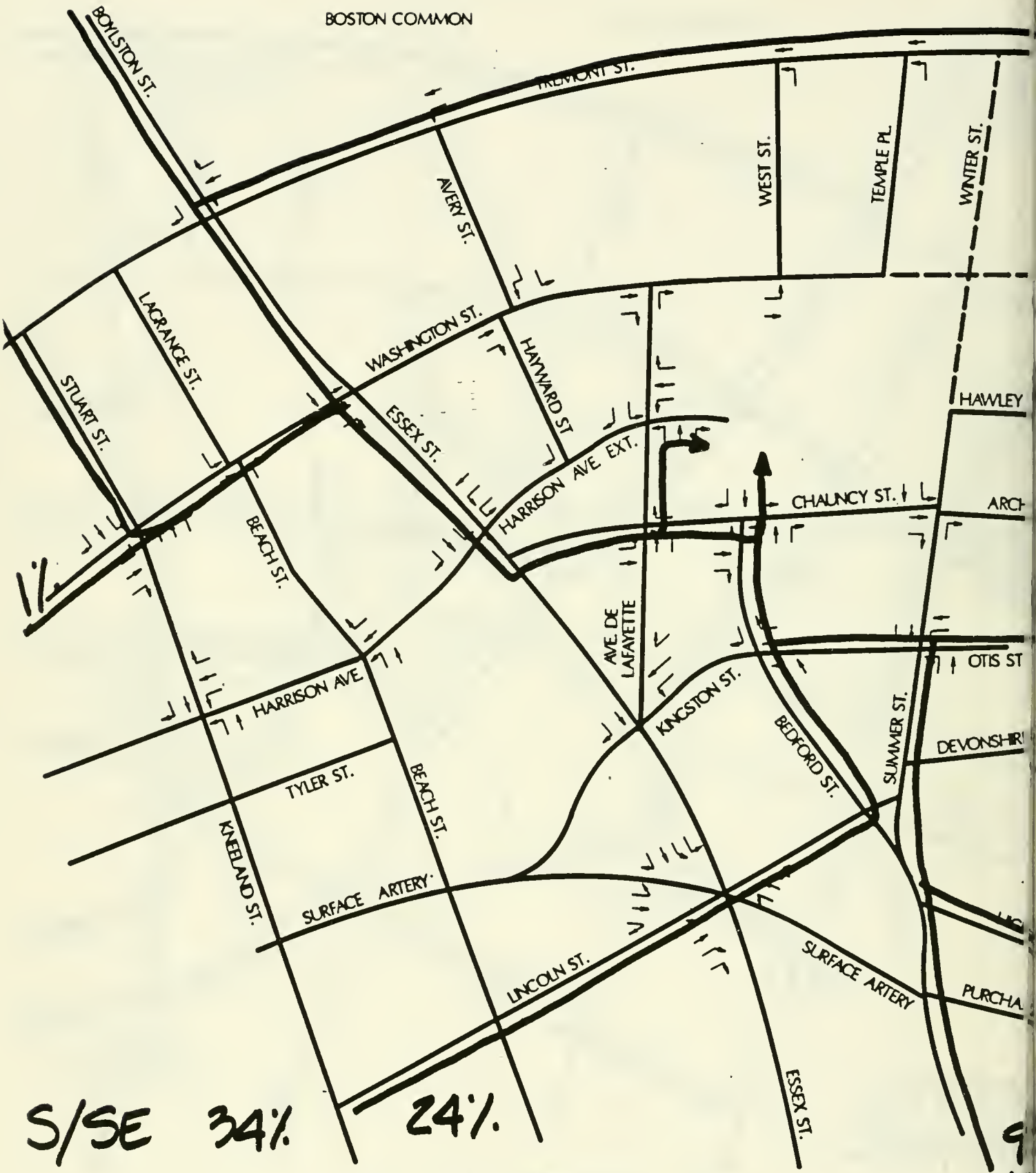
TO SITE EXISTING NETWORK

NOTE: EXISTING NETWORK INCLUDES 1) REVERSAL OF HAYWARD/AVERY 2) CLOSURE OF AVE DE LAFAYETTE TO ALLOW CONSTRUCTION OF SITE!



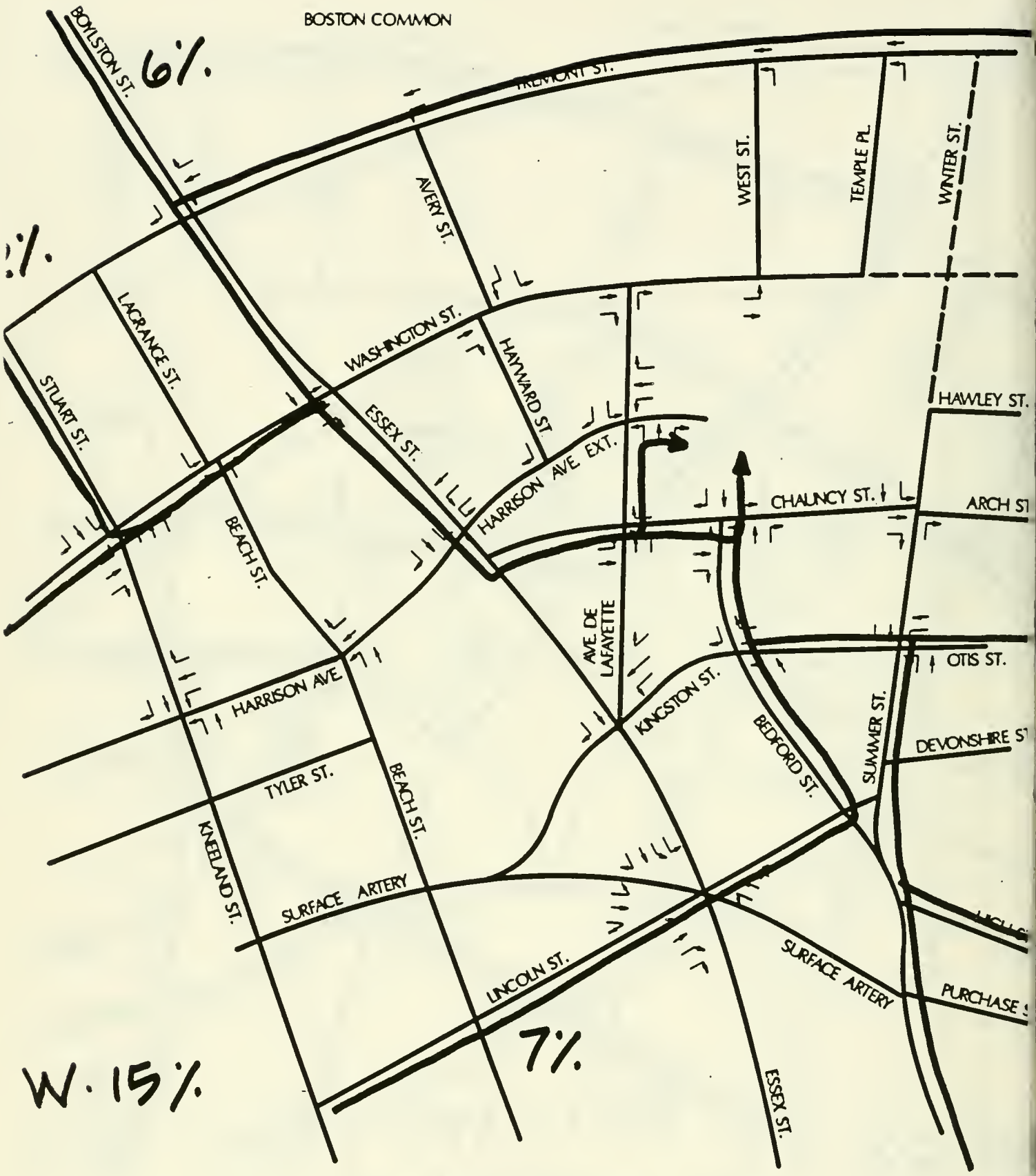
TO SITE

EXISTING NETWORK

NOTE: EXISTING NETWORK INCLUDES 1) REVERSAL OF HAYWARD/AVERY 2) CLOSURE OF AVE DE LAFAYETTE TO ALLOW CONSTRUCTION OF SITE!

TO SITE
EXISTING NETWORK

NOTE: EXISTING NETWORK INCLUDES 1) REVERSAL OF HAYWARD/AVERY 2) CLOSURE OF AVE DE LAFAYETTE TO ALLOW CONSTRUCTION OF SITE!

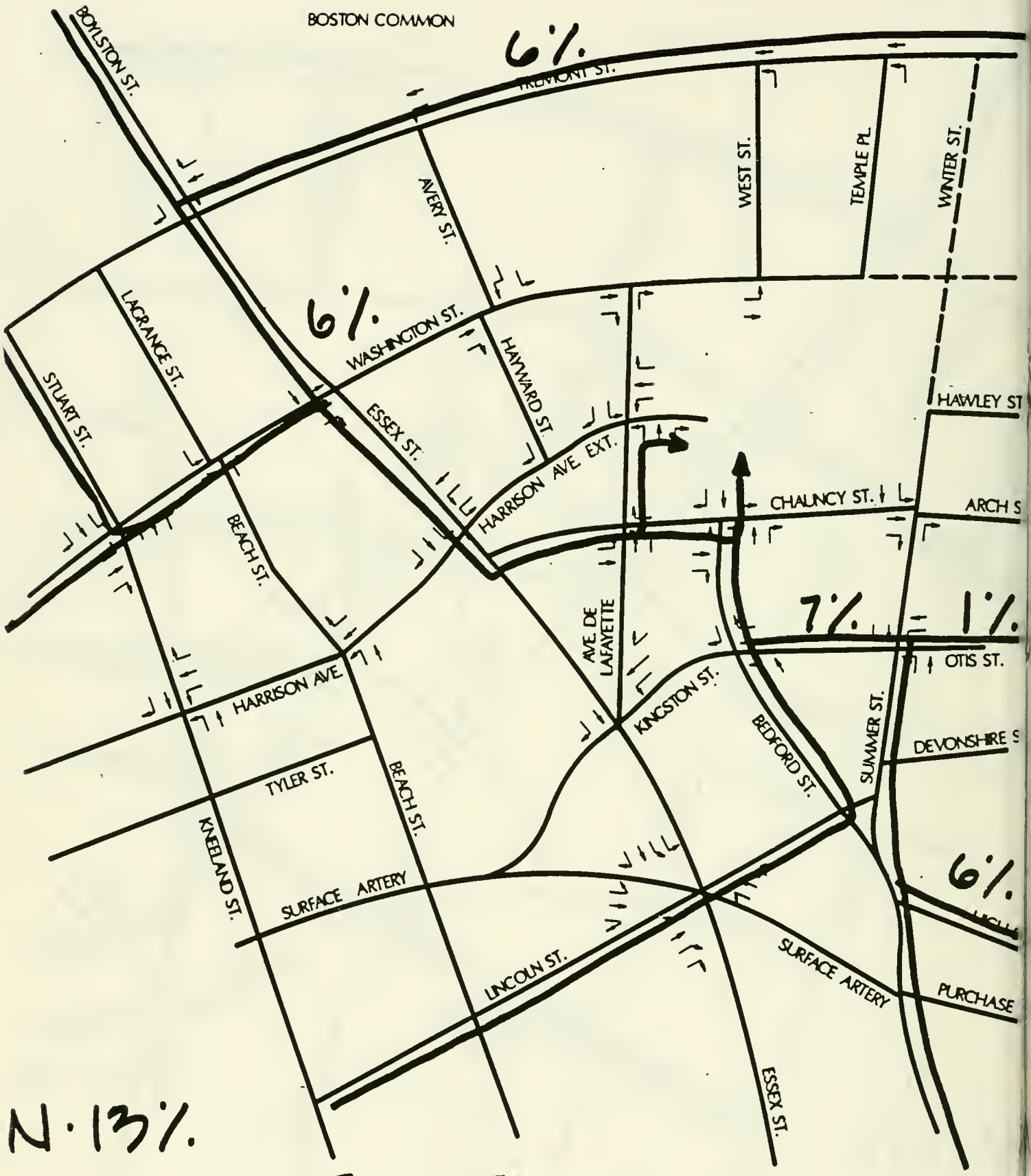


TO SITE
EXISTING NETWORK

NOTE: EXISTING NETWORK INCLUDES 1) REVERSAL OF HAYWARD/AVERY 2) CLOSURE OF AVE DE LAFAYETTE TO ALLOW CONSTRUCTION OF SITE!

TO SITE
EXISTING NETWORK

NOTE: EXISTING NETWORK INCLUDES 1) REVERSAL OF HAYWARD/AVERY 2) CLOSURE OF AVE DE LAFAYETTE TO ALLOW CONSTRUCTION OF SITE!



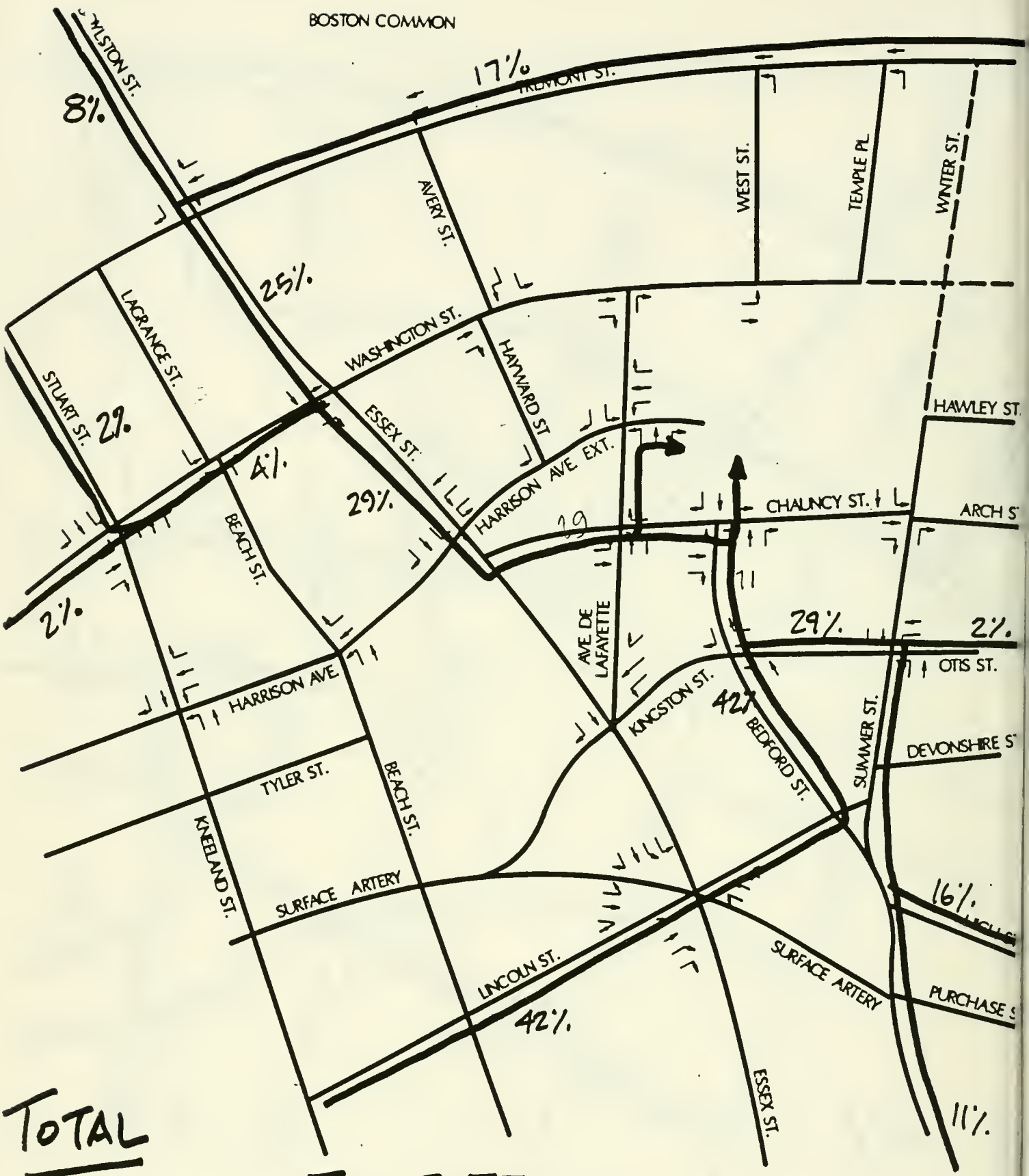
TO SITE
EXISTING NETWORK

NOTE: EXISTING NETWORK INCLUDES 1) REVERSAL OF HAYWARD/AVERY 2) CLOSURE OF AVE DE LAFAYETTE TO ALLOW CONSTRUCTION OF SITE!

E - 14%

TO SITE
EXISTING NETWORK

NOTE: EXISTING NETWORK INCLUDES 1) REVERSAL OF HAYWARD/AVERY 2) CLOSURE OF AVE DE LAFAYETTE TO ALLOW CONSTRUCTION OF SITE!

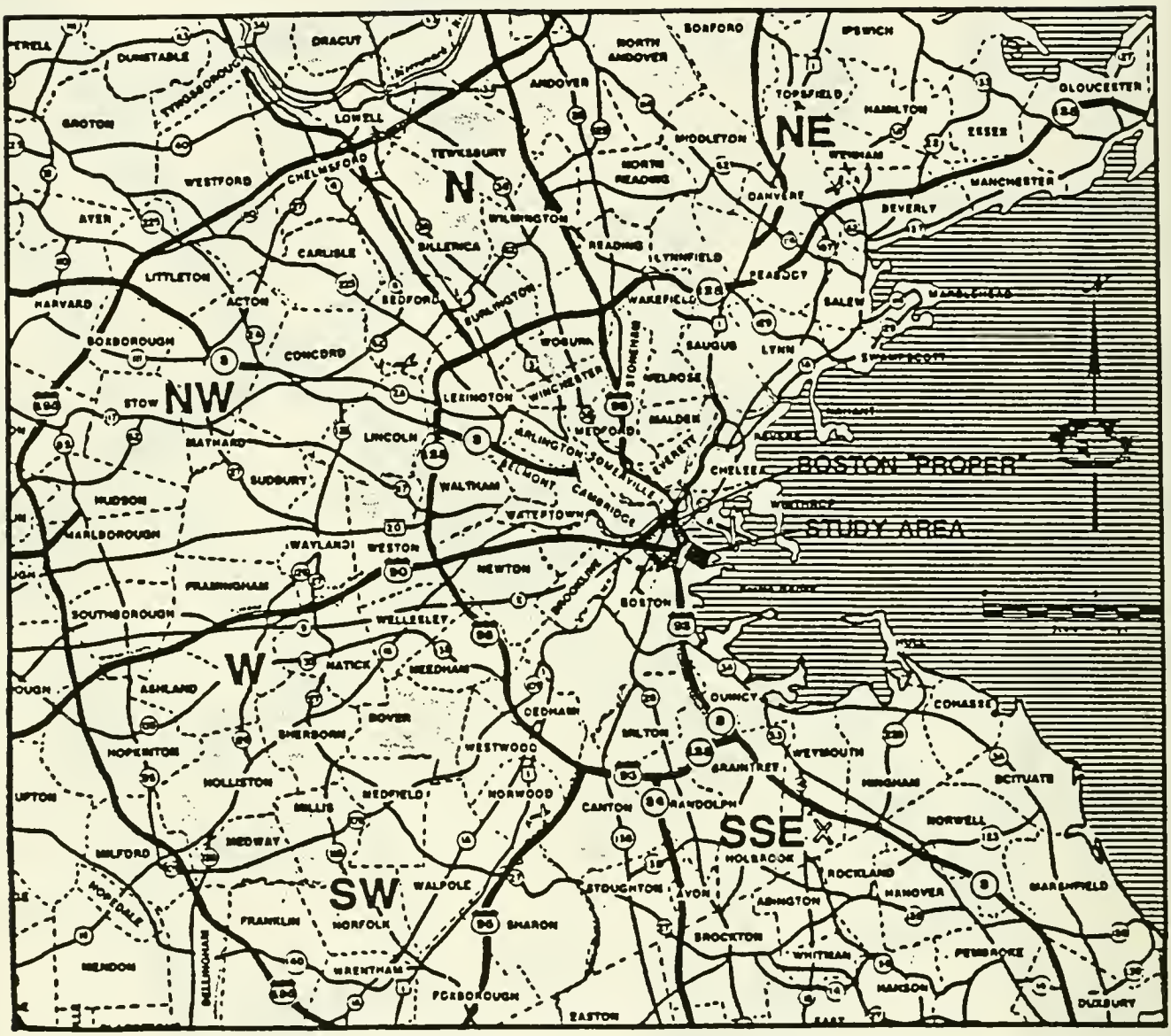


TOTAL

TO SITE
EXISTING NETWORK

NOTE: EXISTING NETWORK INCLUDES 1) REVERSAL OF HAYWARD/AVERY 2) CLOSURE OF AVE DE LAFAYETTE TO ALLOW CONSTRUCTION OF SITE!

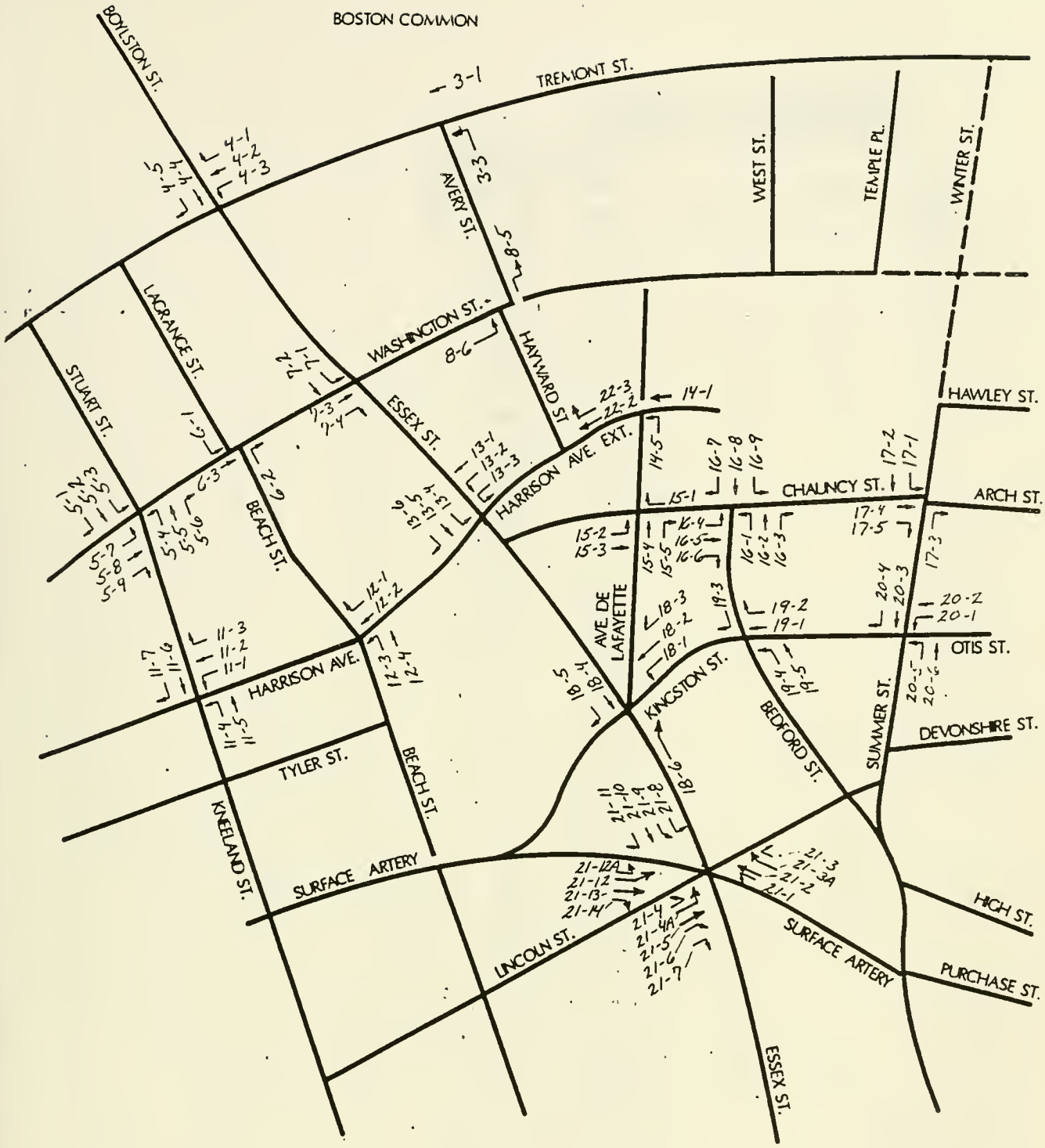
Corridor Distribution of Trips To/From South Boston Piers



Corridor	Highways	Transit	Percent	Peak Hour Person Trips
NE	I-95, US-1, Rt.1A	Blue	14%	2,600
N	I-93, US-3	Orange	13%	2,400
NW	Rt.2	Red	10%	1,850
W	I-90	Green	15%	2,750
SW	I-95, US-1	Orange	10%	1,850
S/SE	I-93, Rt.3, 24	Red	34%	6,250
Boston Proper		All	4%	700
ALL			100%	18,400

Boston Crossing Trip Assignments

Existing and Revised Network



REVISED NETWORK

PREFERRED

MOVEMENT NUMBER	BOSTON CROSSING AM	BOSTON CROSSING PM	BOSTON CROSSING SAT	REVISED NETWORK 1995 BUILD VOLUMES AM	REVISED NETWORK 1995 BUILD VOLUMES PM	REVISED NETWORK 1995 BUILD VOLUMES SAT
1 - 1	104	57	63	1219	1607	
1 - 2				0	0	
2 - 1	104	57	63	1219	1607	
2 - 2				0	0	
3 - 1	104	57	63	1248	1606	
3 - 2				0	0	
3 - 3	23	128	63	727	1048	
4 - 1	23	128	63	321	825	
4 - 2				901	1373	
4 - 3	104	57	63	751	473	
4 - 4	49	27	29	919	888	
4 - 5				157	331	
5 - 1				38	73	
5 - 2				741	740	
5 - 3	12	7	7	153	182	
5 - 4				77	107	
5 - 5	3	14	7	623	847	
5 - 6				165	88	
5 - 7				222	109	
5 - 8	12	7	7	417	211	
5 - 9				118	223	
6 - 1				29	29	
6 - 2				75	277	
6 - 3	24	14	15	735	482	
7 - 1				89	238	190
7 - 2	153	85	92	1236	1433	1267
7 - 3				287	293	156
7 - 4	24	14	15	552	496	412
8 - 1				0	0	
8 - 2				0	0	
8 - 3				0	0	
8 - 4				0	0	
8 - 5	23	128	63	350	518	
8 - 6				379	546	
9 - 1				0	0	
9 - 2				0	0	
9 - 3				0	0	
10 - 1				0	0	
10 - 2				0	0	
11 - 1	22	121	59	133	379	
11 - 2	3	14	7	74	184	
11 - 3	3	14	7	92	128	
11 - 4				76	102	
11 - 5				768	907	
11 - 6				768	885	
11 - 7				80	79	
12 - 1				147	106	
12 - 2	27	149	73	225	537	
12 - 3				72	154	
12 - 4				36	77	
13 - 1	27	149	73	70	270	128

13 - 2	27	149	73	55	220	155	
13 - 3				13	21	31	
13 - 4	177	98	107	768	498	506	
13 - 5				648	1088	823	
13 - 6				302	373	385	
14 - 1	72	390	192	80	500	240	
14 - 2				0	0	0	
14 - 3				0	0	0	
14 - 4				0	0	0	
14 - 5	7	35	17	432	533	407	
14 - 6				0	0	0	
14 - 7	275	152	166	479	213	252	
15 - 1	37	52	36	189	282	219	
15 - 2	92	51	55	261	122	142	
15 - 3	85	47	52	520	397	395	
15 - 4	153	85	92	461	353	298	
15 - 5	61	34	37	85	96	56	
16 - 1	31	17	18	183	193	200	
16 - 2	189	105	114	317	187	145	
16 - 3				98	52	120	
16 - 4	146	81	88	164	96	98	
16 - 5				309	324	251	
16 - 6				132	71	101	
16 - 7	7	35	17	7	79	20	
16 - 8	29	156	77	47	268	108	
16 - 9	23	128	63	39	180	75	
17 - 1				21	46	61	
17 - 2				47	96	126	
17 - 3				4	8	1	
17 - 4	7	35	17	360	359	286	
17 - 5	17	92	45	85	199	158	
18 - 1	29	156	77	301	626	286	
18 - 2				104	345	130	
18 - 3				35	94	91	
18 - 4	28	150	74	674	1187	889	
18 - 5				36	121	91	
18 - 6	214	118	129	510	353	260	
19 - 1				219	382	248	
19 - 2	116	64	70	223	229	265	
19 - 3	29	156	77	179	340	209	
19 - 4				123	130	92	
19 - 5	104	57	63	375	212	198	
20 - 1				56	95	38	
20 - 2	12	7	7	189	378	183	
20 - 3	17	92	45	~~87~~ 74	~~113~~ 205	~~116~~	161
20 - 4	1			57	91	123	
20 - 5	104	57	63	196	141	207	
20 - 6				4	8	1	
21 - 1				74	36		
21 - 2				733	1330		
21 - 3				79	21		
21 - 3A	61	34	37	198	142		
21 - 4				72	35		
21 - 4A	153	85	92	274	191		
21 - 5	104	57	63	1079	312		
21 - 6				293	213		

21 - 7				33	12	
21 - 8				131	153	
21 - 9	22	121	59	571	907	
21 - 10				92	86	
21 - 11	34	184	91	204	663	
21 - 12				90	45	
21 - 12A				38	22	
21 - 13				512	713	
21 - 14				19	13	
22 - 1				0	0	0
22 - 2	55	298	147	139	511	315
22 - 3	23	128	63	371	524	333

MOVEMENT NUMBERS

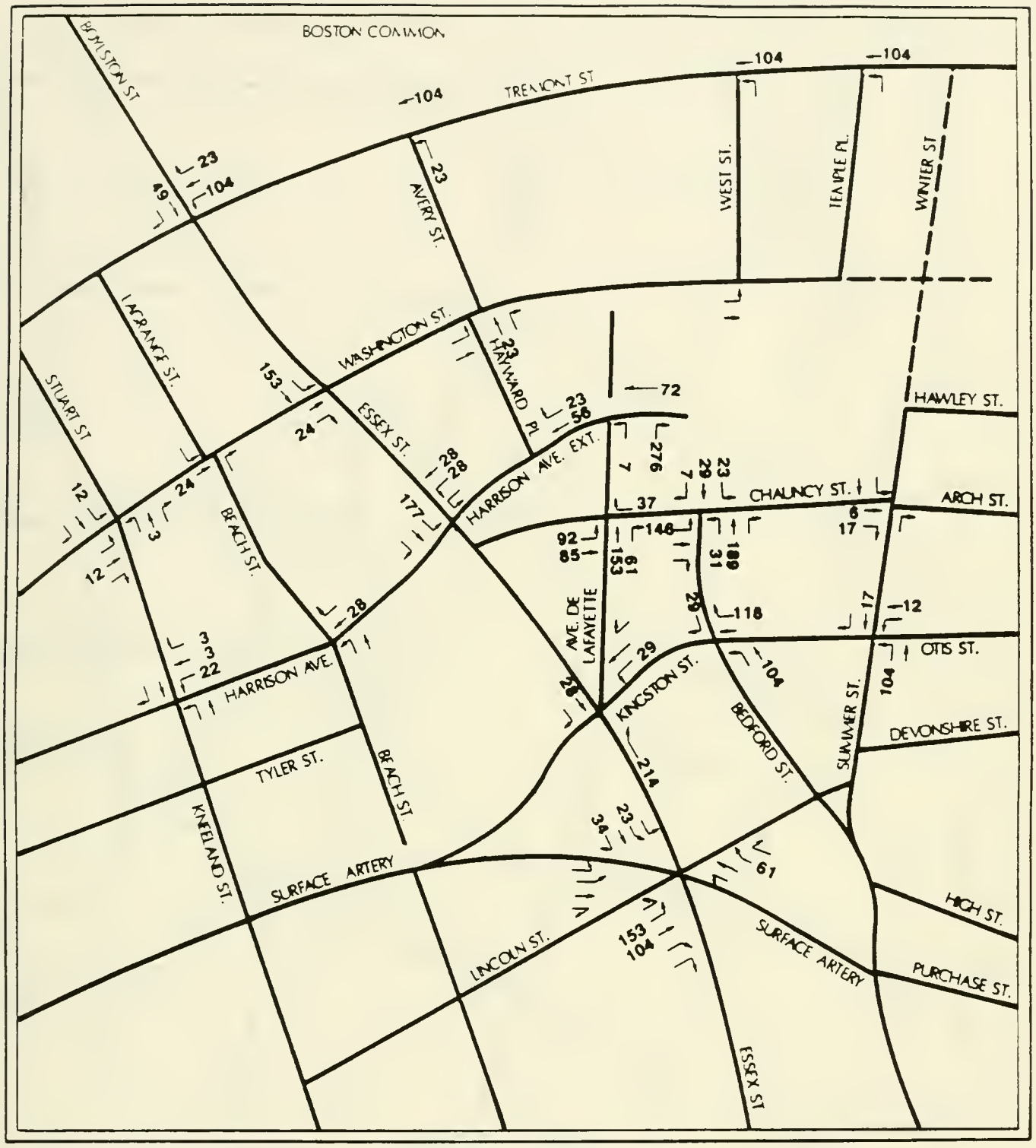
PREFERRED

MOVEMENT NUMBER	BOSTON CROSSING AM	BOSTON CROSSING PM	BOSTON CROSSING SAT	EXISTING NETWORK 1995 BUILD VOLUMES AM	EXISTING NETWORK 1995 BUILD VOLUMES PM	EXISTING NETWORK 1995 BUILD VOLUMES SAT
1 - 1	104	56	63	1269	1714	
1 - 2				21	21	
2 - 1	104	56	63	1289	1735	
2 - 2				31	31	
3 - 1	104	56	63	1355	1781	
3 - 2				0	0	
3 - 3	23	128	63	636	993	
4 - 1	23	128	63	296	794	
4 - 2				902	1352	
4 - 3	104	56	63	660	629	
4 - 4	49	27	29	919	888	
4 - 5				157	331	
5 - 1				38	73	
5 - 2				741	740	
5 - 3	12	7	7	153	182	
5 - 4				126	105	
5 - 5	3	14	7	669	857	
5 - 6				313	201	
5 - 7				222	82	
5 - 8	12	7	7	417	211	
5 - 9				106	216	
6 - 1				29	28	
6 - 2				90	324	
6 - 3	24	13	15	884	599	
7 - 1	153	83	92	262	373	352
7 - 2				1100	1452	1148
7 - 3				469	412	290
7 - 4	24	13	15	534	535	353
8 - 1				0	0	
8 - 2				0	0	
8 - 3				41	41	
8 - 4				0	0	
8 - 5	23	128	63	106	339	
8 - 6				532	669	
9 - 1				0	0	
9 - 2				52	52	
9 - 3				0	0	
10 - 1				0	0	
10 - 2				0	0	
11 - 1	22	121	59	137	419	
11 - 2	3	14	7	128	248	
11 - 3	3	14	7	153	180	
11 - 4				76	84	
11 - 5				949	956	
11 - 6				768	885	
11 - 7				80	79	
12 - 1				122	106	
12 - 2	27	149	73	240	619	
12 - 3				174	229	
12 - 4				104	124	

13 - 1	27	149	73	74	266	128
13 - 2	27	149	73	56	218	147
13 - 3				13	20	41
13 - 4	177	96	107	769	536	480
13 - 5				647	1117	804
13 - 6				300	459	343
14 - 1	72	390	192	80	500	240
14 - 2				0	0	0
14 - 3				0	0	0
14 - 4				0	0	0
14 - 5	7	35	17	181	339	296
14 - 6				0	0	0
14 - 7	311	169	188	515	230	274
15 - 1	226	155	150	399	376	346
15 - 2	92	50	55	276	141	141
15 - 3	85	46	52	501	411	378
15 - 4				22	63	83
15 - 5				13	31	8
16 - 1	220	120	132	393	296	325
16 - 2	214	116	129	342	198	160
16 - 3				98	52	120
16 - 4	85	46	52	103	61	62
16 - 5				280	319	224
16 - 6				132	61	101
16 - 7	7	35	17	7	79	20
16 - 8	29	156	77	47	268	108
16 - 9	23	128	63	39	180	75
17 - 1				21	46	61
17 - 2				47	96	126
17 - 3				4	8	1
17 - 4	7	35	17	331	359	272
17 - 5	17	92	45	85	199	144
18 - 1	29	156	77	301	626	340
18 - 2				104	345	167
18 - 3				35	94	91
18 - 4	27	149	73	673	1195	857
18 - 5				36	129	91
19 - 1				219	382	248
19 - 2	177	96	107	284	262	304
19 - 3	29	156	77	179	330	209
19 - 4				123	130	92
19 - 5	256	139	155	548	294	300
20 - 1				56	95	38
20 - 2	12	7	7	189	326	184
20 - 3	17	92	45	74	205	147
20 - 4				57	91	123
20 - 5	165	90	99	257	174	244
20 - 6				4	8	1
21 - 1				74	36	
21 - 2				809	1340	
21 - 3				79	21	
21 - 4				72	35	
21 - 5	256	139	155	1241	414	
21 - 6				293	213	
21 - 7				33	12	

21 - 8				131	153	
21 - 9	22	121	59	571	913	
21 - 10				92	86	
21 - 11	34	184	91	204	666	
21 - 12				90	45	
21 - 13				522	713	
21 - 14				19	13	
22 - 1				0	0	0
22 - 2	55	298	147	139	501	315
22 - 3	23	128	63	121	339	222

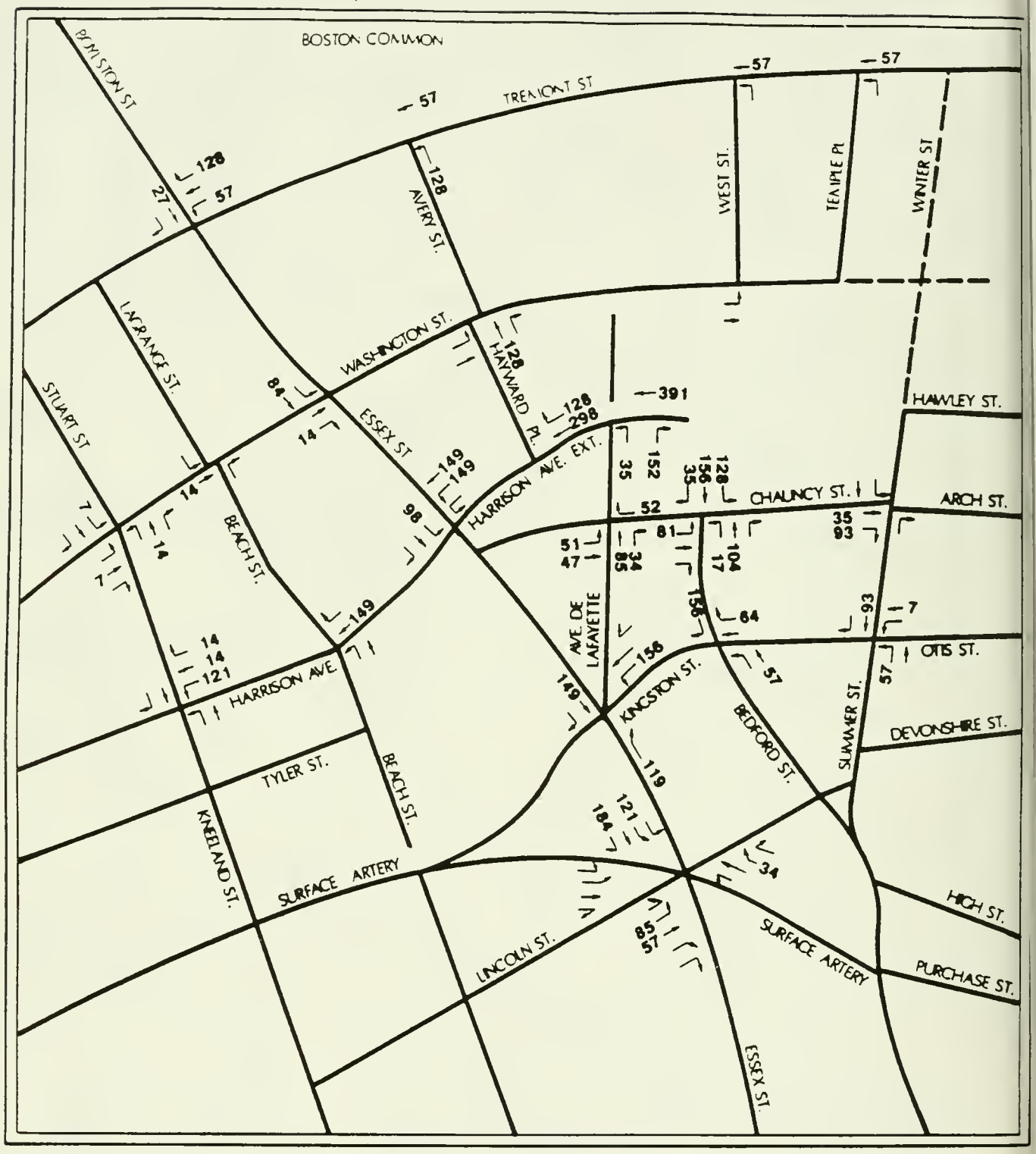
Additional Trips Due to Boston Crossing Revised Network



AM PEAK HOUR ADDITIONAL TRAFFIC VOLUMES DUE TO BOSTON CROSSING REVISED NETWORK

BOSTON CROSSING

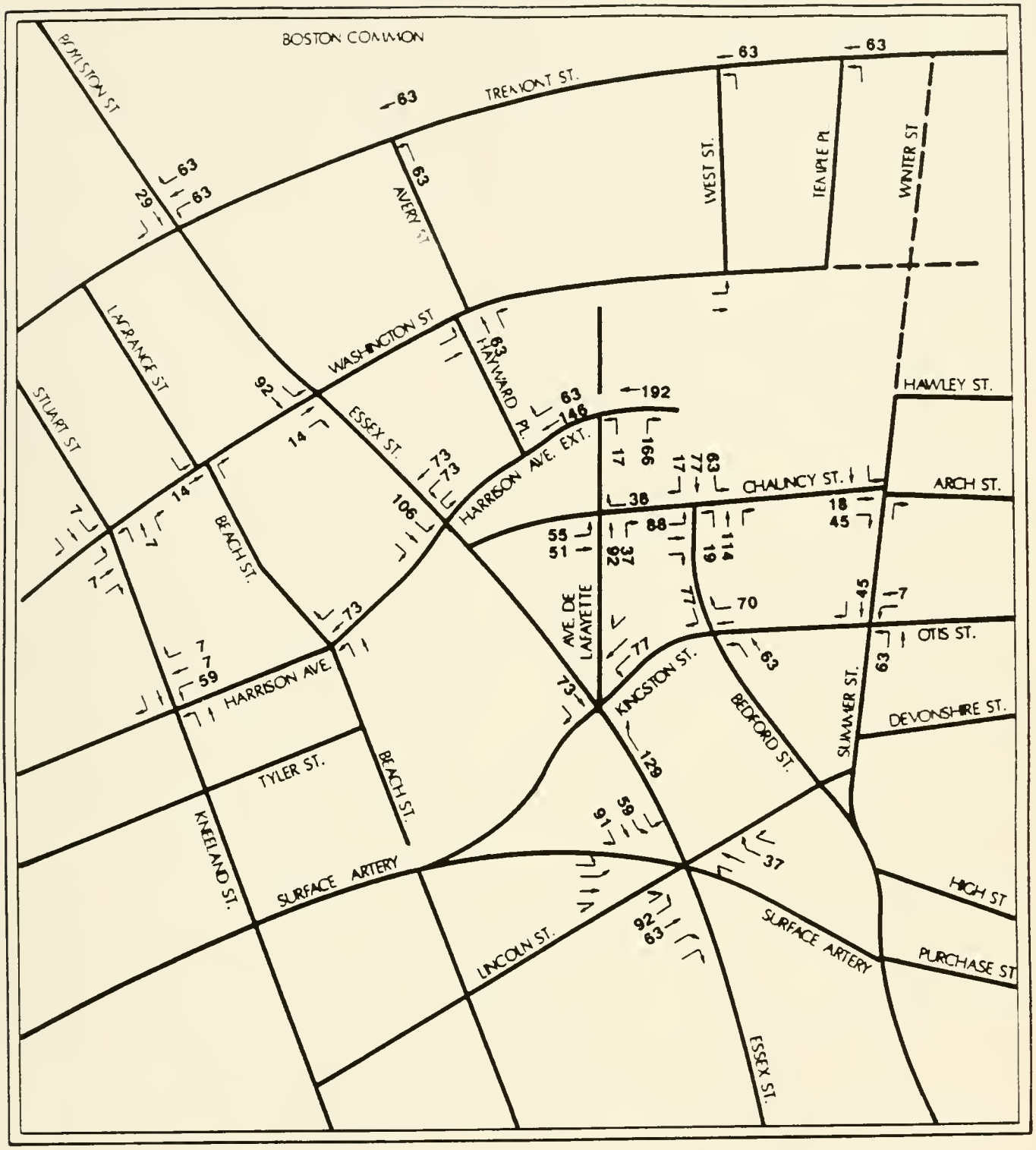
Not to scale.



PM PEAK HOUR ADDITIONAL TRAFFIC VOLUMES DUE TO BOSTON CROSSING REVISED NETWORK

BOSTON CROSSING

Not to scale.

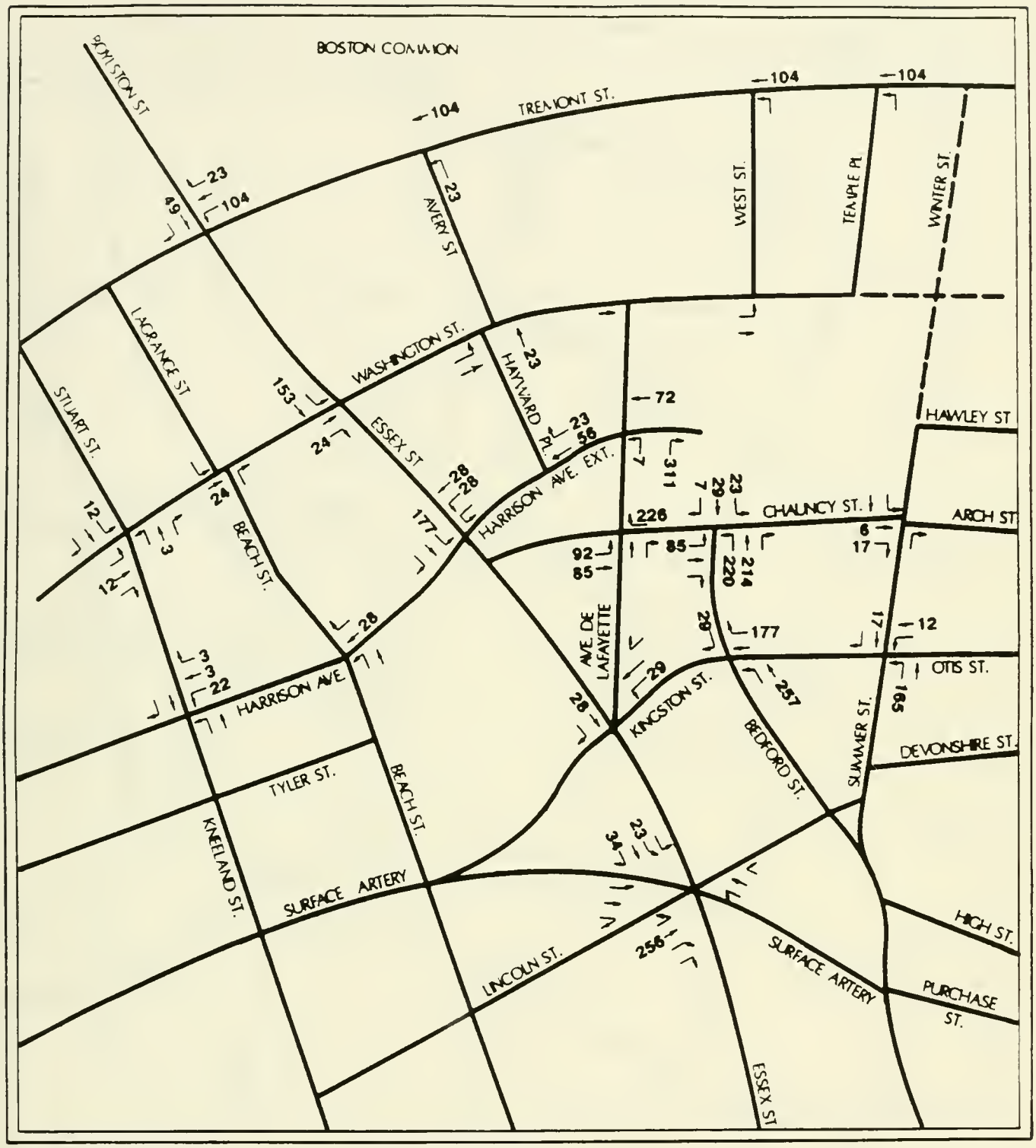


SATURDAY PEAK HOUR ADDITIONAL TRAFFIC VOLUMES
DUE TO BOSTON CROSSING REVISED NETWORK

BOSTON CROSSING

Not to scale.

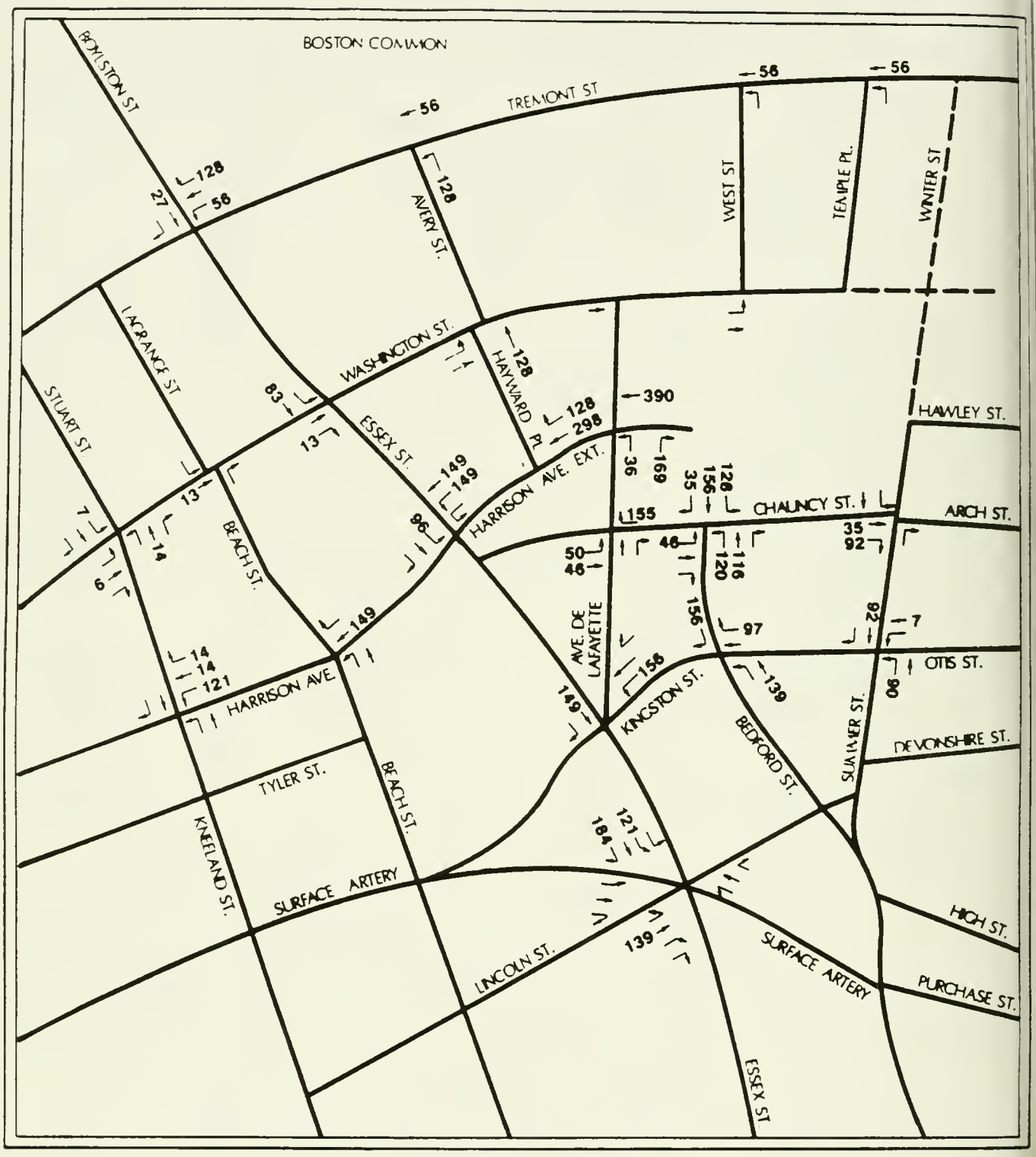
Additional Trips Due to Boston Crossing Existing Network



AM PEAK HOUR ADDITIONAL TRAFFIC VOLUMES
DUE TO BOSTON CROSSING EXISTING NETWORK

BOSTON CROSSING

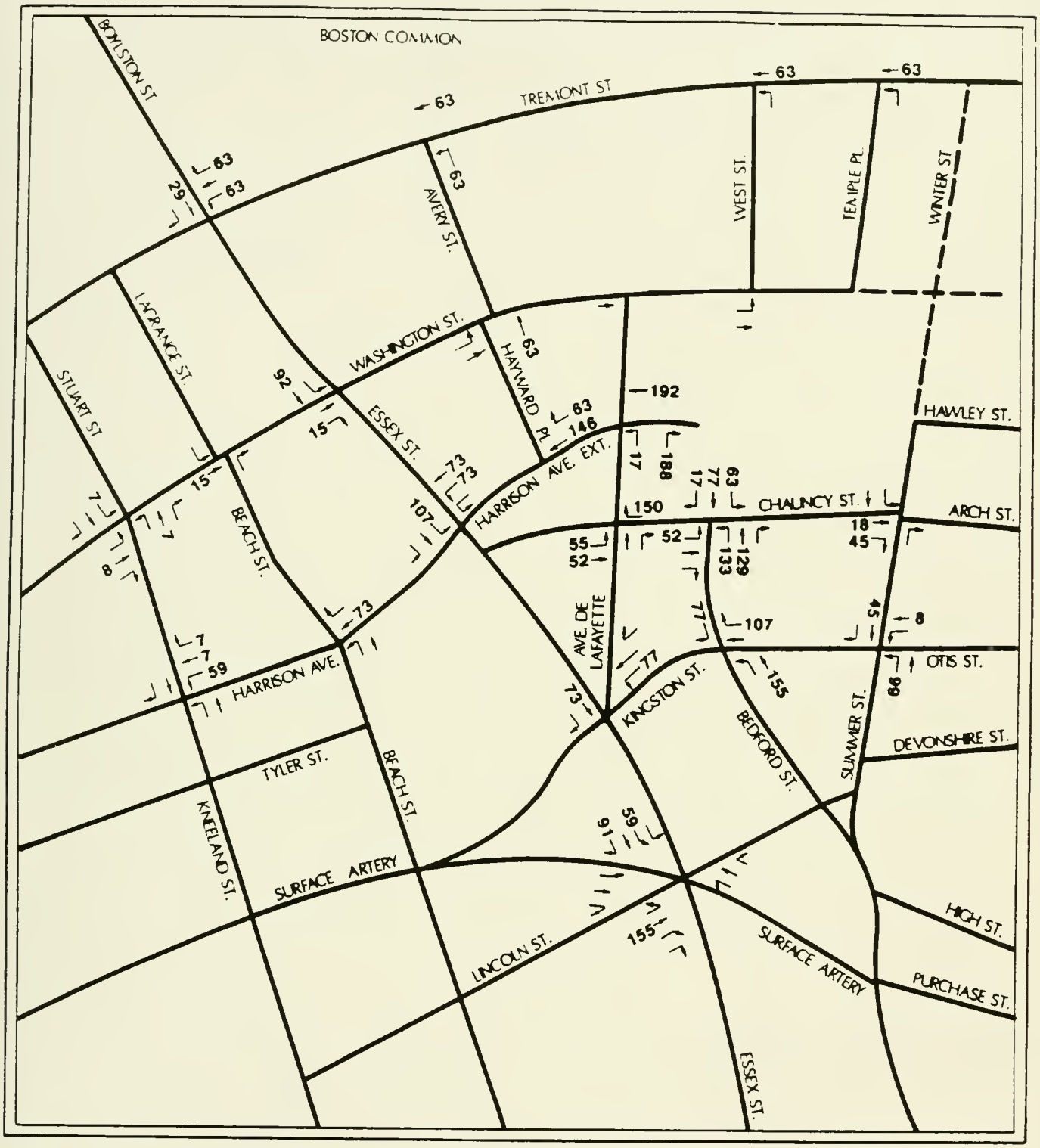
Not to scale.



PM PEAK HOUR ADDITIONAL TRAFFIC VOLUMES DUE TO BOSTON CROSSING EXISTING NETWORK

BOSTON CROSSING

Not to scale.



SATURDAY PEAK HOUR ADDITIONAL TRAFFIC VOLUMES DUE TO BOSTON CROSSING EXISTING NETWORK

BOSTON CROSSING

Not to scale.

On-Street Parking Survey

An on-street parking survey was conducted in the immediate vicinity of the project site between 7 AM and 6:30 PM. Parking spaces were inventoried every 30 minutes with observers recording vehicle type and license plate number, available time on the parking meter and whether the parked vehicle was ticketed. The study area, shown in Figure A-1, contained 194 parking spaces. A number of these spaces are signed for No Stopping Any Time, but were included in the survey because vehicles do often park there on a typical weekday. Other categories of spaces included in the study area are:

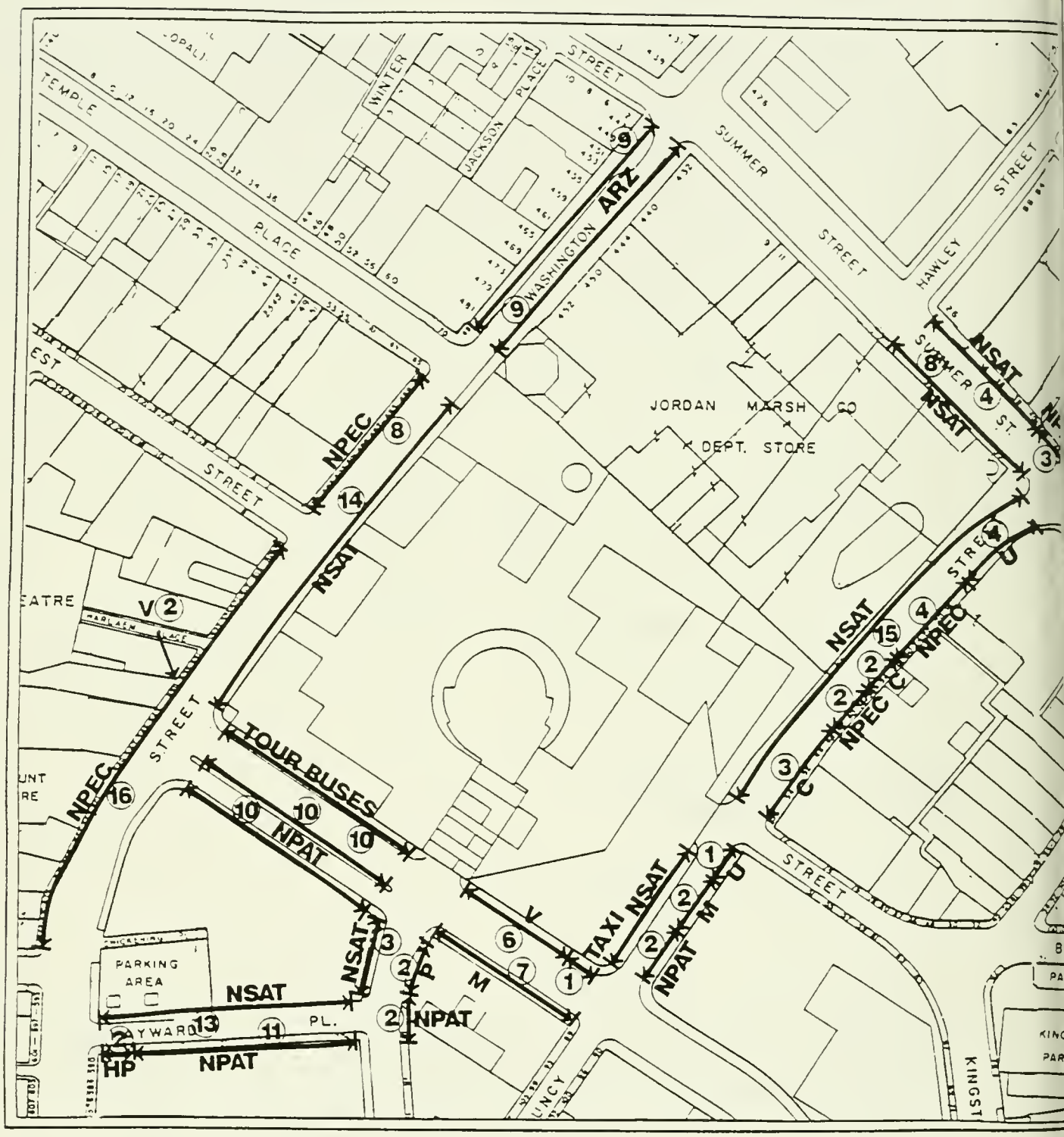
- Parking Meters - 9 spaces
- Valet Parking - 8 spaces
- Taxi Zone - 1 space
- Reserved for City Vehicles - 5 spaces
- Reserved for Post Office Vehicles - 2 spaces
- Tour Bus Parking - 10 spaces
- Auto-Restricted Zone Parking - 18 spaces
- No Parking Except Commercial Vehicles - 27 spaces
- No Parking - curb spaces where commercial vehicles may load/unload
- Unmarked Spaces

Washington Street - West Side

<u>Summer Street to Hayward Place</u>

No Parking Except Commercial Vehicles
Valet Parking

South of Temple Place, the west side of Washington Street is signed for No Parking, Except Commercial Vehicles, except for two spaces reserved for valet parking. The curb space measures approximately 500 feet. For survey purposes, 24 spaces were identified in this area. North of Temple Place is the auto-restricted zone (ARZ), and then are no signs posted along either curb. Trucks may load and unload in the ARZ until 11 AM. There is room for approximately nine vehicles on the west side of Washington Street in the ARZ.



KEY:
- (X) = NUMBER OF SPACES
- ARZ = AUTO RESTRICTION ZONE
- NPEC = NO PARKING EXCEPT COMMERCIAL VEHICLES
- V = VALET PARKING
- NSAT = NO STOPPING
- NPAT = NO PARKING
- P = POST OFFICE PARKING
- M = METERS
- U = UNMARKED

FIGURE A - 1

ON-STREET PARKING SURVEY

BOSTON CROSSING

0 60 120 240

FEET

A total of 174 vehicles were parked in this area during the study. Sixty-three percent of vehicles parked for one-half hour or less. Two vehicles parked for six and one-half hours; with one parked in the ARZ. The average duration per vehicle was one hour and five minutes. Commercial vehicle average duration was one hour and 16 minutes. Non-commercial vehicles (by definition--illegal parking) parked for an average duration of 57 minutes.

Technically, it is illegal to park in the ARZ after 11 AM. However, there were as many vehicles parked after 11 AM as were parked "legally" before 11 AM. The half-hour loading/unloading time limit was exceeded by 42 percent of commercial vehicles.

Washington Street - East Side

Summer Street to Hayward Place

No Stopping Any Time

South of Temple Place, the entire east side of Washington street is signed for No Stopping Any Time. In the ARZ, there is 200 feet of curb space with room for approximately nine passenger vehicles. There were no vehicles parked on the east side of the ARZ during the 7 AM - 6:30 PM survey.

South of Temple Place, a total of five vehicles were parked during the entire day. Their parking duration was one half hour or less. Two of the vehicles displayed commercial plates.

Hayward Place - South Side

Washington Street to Harrison Avenue Extension

Handicapped Parking and No Parking Any Time

There is room for approximately 12 passenger vehicles along the south curb of Hayward Place. Two spaces are reserved for vehicles with HP plates and the rest of the block is available for commercial vehicle loading/unloading functions.

average parking duration of two hours and 33 minutes. Parking occupancy was 90% between 8 AM and 5 PM. During 25 percent of the observation periods, 100 percent of the spaces were filled.

Avenue de Lafayette - Both Sides
Washington Street to Harrison Avenue Extension

No Parking Any Time - south side
Tour Bus Parking - north side

There is no parking on the south side of Avenue de Lafayette. During the survey, no vehicles were observed parked here. On the north side, where curb space is reserved for tour buses, only one bus was observed utilizing this space (duration - two and one-half hours). In addition, 38 illegally parked vehicles were observed. Their duration was an average of one hour and 17 minutes. Prior to 10 AM, there were no vehicles parked on the north side of Avenue de Lafayette. Between 10 AM and 6:30 PM, approximately 80 percent of the spaces were occupied.

Summer Street - Both Sides
Hawley Street to Chauncy Street

No Stopping Any Time - south side and portions of north side
No Parking Except Commercial Vehicles - north side

On the north side, there are three spaces reserved for commercial vehicles. The rest of the block (on both sides) is signed for No Stopping Any Time. Seven commercial vehicles were seen parked here, one for six and one-half hours. There were five others who exceeded the one-half hour limit. Trucks parked for an average duration of two hours and 21 minutes.

There were 29 vehicles parked illegally on Summer Street between Hawley Street and Chauncy Street. Many of the vehicles were trucks with the average duration being 47 minutes.

Chauncy Street - West Side
Summer Street to Avenue de Lafayette

No Stopping Any Time

The entire side of the street is posted for No Stopping Any Time. During the survey 43 vehicles were parked here. Their average parking duration was 55 minutes.

Chauncy Street - East Side
Summer Street to Bedford Street

Parking for commercial vehicles, city vehicles and general traffic

The first four spaces on the east side of Chauncy Street, south of Summer Street, are unsigned and appear to be open to general parking. Thirty-one vehicles were parked here throughout the day. The average parking duration was 44 minutes. Parking occupancy was approximately 60 percent between 8 AM and 5 PM.

Six spaces on the east side of Chauncy Street are reserved for commercial vehicles, and five are reserved for city vehicles. There is considerable illegal parking on this side of Chauncy Street. Sixty-nine vehicles were not city or commercial vehicles. They parked for an average duration of 49 minutes. There were 23 commercial vehicles parked in the six spaces and their average stay was 43 minutes. Between 10 AM and 5 PM, approximately two-thirds of the parking spaces were occupied.

Chauncy Street - East Side
Bedford Street to Avenue de Lafayette

Metered and No Parking Any Time

The first two spaces, north of Avenue de Lafayette, are signed No Parking Any Time and are available for commercial vehicle loading/unloading functions. The two spaces were occupied 69 percent of the time during the survey by only five vehicles. One commercial vehicle parked for 11 hours. The average duration per vehicle was three hours and 12 minutes.

The next two spaces have one-hour meters, and they were occupied 90 percent of the time. There was time on the meters approximately 50 percent of the time. Eighteen vehicles parked at the meters and the average duration was one hour and 38 minutes.

The last space, between the metered space and the Bedford Street crosswalk, is unmarked and there is some question whether it is a legal space. From 8:30 AM to 1:30 PM this space was occupied by five different vehicles. Before 8:30 AM and after 1:30 PM no one parked in this space.

The study area contains 12 different types of parking regulations. Legal parking spaces were occupied at approximately a 75 percent rate during the highest usage hours of 10:30 AM to 2:30 PM. Parking durations were generally under two hours in most of the areas. Enforcement was not very active on the day of the survey but double parking was minimal. Parking demand in the study area is not as intense as in other areas of Downtown Boston.

Pedestrian Count Summary

HOWARD/STEIN-HUDSON ASSOCIATES, INC.

Boston Crossing Street Segment Pedestrian Analysis

Street: Tremont Segment: Winter to West

Date: 4/3/ Time: 12:15 pm Surveyor: LG	Side: West Section: Winter to Temple	Side: West Section: Temple to West	Side: Section:
Total sidewalk width	48' 8"	28' 4"	
Effective width	32' 2"	8' 4"	
Roadway width	42' 6"	42' 7"	
Construction Locations			
Ped/Auto Conflicts at Corners:			
Ped/Auto Conflicts at Midblock:			
Ped/Ped Conflicts:			
Activity Nodes:	Common	visitor center	
MBTA Bus Stops or Station Entrances:	large bus stop		
Other Obstructions:	large planters for flowers and trees, waste baskets	garden boxes	
Pedestrian Volumes:	light	moderate	
Traffic Volumes:	high	high	

HOWARD/STEIN-HUDSON ASSOCIATES, INC.

Boston Crossing Street Segment Pedestrian Analysis

Street: Tremont Segment: Temple to West

Date: 4/3 Time: 12:15 Surveyor: EH	Side: east Section: Temple to West	Side: Section:	Side: Section:
Total sidewalk width	18' 8"		
Effective width	9' 3"		
Roadway width	42' 9"		
Construction Locations			
Ped/Auto Conflicts at Corners:	Tremont / Temple Tremont / West		
Ped/Auto Conflicts at Midblock:			
Ped/Ped Conflicts:			
Activity Nodes:	McDonald's, liquor store		
MBTA Bus Stops or Station Entrances:			
Other Obstructions:	big block of granite and grating		
Pedestrian Volumes:	high		
Traffic Volumes:	high		

HOWARD/STEIN-HUDSON ASSOCIATES, INC.

Boston Crossing Street Segment Pedestrian Analysis

Street: Tremont Segment: Winter to Temple

Date: 4/5 Time: 8:45 am Surveyor: LG	Side: east Section: Winter to Temple	Side: Section:	Side: Section:
Total sidewalk width	23' 2" wider in front		
Effective width	7' 2" of St. Paul's 26' 8"		
Roadway width	42' 6"		
Construction Locations	entire north end of block is obstructed at corner		
Ped/Auto Conflicts at Corners:	major ped/auto conflict at Tremont/Winter		
Ped/Auto Conflicts at Midblock:			
Ped/Ped Conflicts:	Pedestrians crossing Tremont in both directions		
Activity Nodes:	Park St. Station Downtown Crossing		
MBTA Bus Stops or Station Entrances:	both an elevator exit and an escalator exit		
Other Obstructions:			
Pedestrian Volumes:	moderate		
Traffic Volumes:	high		

HOWARD/STEIN-HUDSON ASSOCIATES, INC.

Boston Crossing Street Segment Pedestrian Analysis

Street: Mason Segment: Avery to West

Date: 4/5 Time: 4 10 pm Surveyor: LG	Side: west Section: Avery to West	Side: east Section: Avery to West	Side: Section:
Total sidewalk width	5' 1"	4' 8"	
Effective width	3' 7"	2' 4"	
Roadway width	20' 6"	20' 6"	
Construction Locations	Southern ⅓ of block - across from Allright Parking - building going up on Common		
Ped/Auto Conflicts at Corners:			
Ped/Auto Conflicts at Midblock:			
Ped/Ped Conflicts:			
Activity Nodes:		Allright Parking Lot	
MBTA Bus Stops or Station Entrances:			
Other Obstructions:		broken sidewalk in front of Allright Parking	
Pedestrian Volumes:	light	very light	
Traffic Volumes:	light	very light	

HOWARD/STEIN-HUDSON ASSOCIATES, INC.

Boston Crossing Street Segment Pedestrian Analysis

Street: Tremont Segment: Avery to West

Date: 4/5 Time: 4:15 pm Surveyor: LG	Side: West Section: Avery to West	Side: East Section: Avery to West	Side: Section:
Total sidewalk width	36' 5"	12'	
Effective width	19' 7"	9' 6"	
Roadway width	43'	43'	
Construction Locations		large section on southern end of block - next to Tremont on the Common	
Ped/Auto Conflicts at Corners:		~~yes~~ - at Tremont/West and Tremont/Avery	
Ped/Auto Conflicts at Midblock:			
Ped/Ped Conflicts:			
Activity Nodes:	Common	Tremont on the Common garage entrance/exit	
MBTA Bus Stops or Station Entrances:		valet parking adjacent to Tremont on the Common	
Other Obstructions:	planter boxes	planter boxes in front of Tremont on the Common	
Pedestrian Volumes:	high	light	
Traffic Volumes:	high	high	

HOWARD/STEIN-HUDSON ASSOCIATES, INC.

Boston Crossing Street Segment Pedestrian Analysis

Street: Temple Segment: Tremont to Washington

Date: 4/3 Time: 12:45 pm Surveyor: LG	Side: north Section: Tremont to Washington	Side: South Section: Tremont to Washington	Side: Section:
Total sidewalk width	14' 1"	10' 4"	
Effective width	5' 3"	6' 5"	
Roadway width	24' 8"	24' 8"	
Construction Locations			
Ped/Auto Conflicts at Corners:	Tremont / Temple Washington / Temple	Tremont / Temple Washington / Temple	
Ped/Auto Conflicts at Midblock:			
Ped/Ped Conflicts:			
Activity Nodes:			
MBTA Bus Stops or Station Entrances:		at corner of Temple / Washington	
Other Obstructions:			
Pedestrian Volumes:	light	light	
Traffic Volumes:	light	light	

HOWARD/STEIN-HUDSON ASSOCIATES, INC.

Boston Crossing Street Segment Pedestrian Analysis

Street: West Segment: Tremont to Washington

Date: 4/3 Time: 11:50am Surveyor: LG	Side: North Section: Tremont to Washington	Side: South Section: Tremont to Mason	Side: South Section: Mason to Washington
Total sidewalk width	7' 1"	7' 1"	7' 1"
Effective width	4' 3"	3' 3"	3' 8"
Roadway width	22' 2"	22' 2"	22' 2'
Construction Locations			
Ped/Auto Conflicts at Corners:	Tremont / West and Washington / West	Tremont / West	Washington / West
Ped/Auto Conflicts at Midblock:			
Ped/Ped Conflicts:			
Activity Nodes:	Cornucopia, Brattle Book Store	Burger King	
MBTA Bus Stops or Station Entrances:			
Other Obstructions:			
Pedestrian Volumes:	moderate	light	light
Traffic Volumes:	moderate	moderate	moderate

HOWARD/STEIN-HUDSON ASSOCIATES, INC.

Boston Crossing Street Segment Pedestrian Analysis

Street: Washington Segment: Temple to Winter

Date: 4/4 Time: 5 pm Surveyor: DG	Side: West Section: Temple to Winter	Side: Section:	Side: Section:
Total sidewalk width	17' 2"		
Effective width	13' 5"		
Roadway width	22' 8"		
Construction Locations			
Ped/Auto Conflicts at Corners:			
Ped/Auto Conflicts at Midblock:			
Ped/Ped Conflicts:	at downtown crossing		
Activity Nodes:	(T) Stop		
MBTA Bus Stops or Station Entrances:	(T) downtown crossing		
Other Obstructions:	vendor carts		
Pedestrian Volumes:	high		
Traffic Volumes:	none		

HOWARD/STEIN-HUDSON ASSOCIATES, INC.

Boston Crossing Street Segment Pedestrian Analysis

Street: Washington Segment: Temple to West

Date: 4/3 Time: 12:15 pm Surveyor: LG	Side: west Section: Temple to West	Side: Section:	Side: Section:
Total sidewalk width	16' 5"		
Effective width	13' 5"		
Roadway width	23' 3"		
Construction Locations			
Ped/Auto Conflicts at Corners:	Washington/Temple Washington/West		
Ped/Auto Conflicts at Midblock:			
Ped/Ped Conflicts:			
Activity Nodes:	many shops		
MBTA Bus Stops or Station Entrances:			
Other Obstructions:			
Pedestrian Volumes:	high		
Traffic Volumes:	high		

HOWARD/STEIN-HUDSON ASSOCIATES, INC.

Boston Crossing Street Segment Pedestrian Analysis

Street: Washington Segment: Delafayette to West

Date: 4/5 Time: 4:00 pm Surveyor: LG	Side: west Section: Delafayette to West	Side: Section:	Side: Section:
Total sidewalk width	10' 2"		
Effective width	6' 7"		
Roadway width	31' 3"		
Construction Locations			
Ped/Auto Conflicts at Corners:	Washington/West		
Ped/Auto Conflicts at Midblock:			
Ped/Ped Conflicts:			
Activity Nodes:			
MBTA Bus Stops or Station Entrances:			
Other Obstructions:	full trash can at corner of Washington + alley		
Pedestrian Volumes:	high		
Traffic Volumes:	moderate		

HOWARD/STEIN-HUDSON ASSOCIATES, INC.

Boston Crossing Street Segment Pedestrian Analysis

Street: Washington Segment: Summer St to DeLafayette

Date: 4/4 Time: 5:10 Surveyor: DG	Side: east Section: Summer to Temple	Side: east Section: Temple to West	Side: east Section: West to DeLafayette
Total sidewalk width	15' 3"	10' 2"	10' 3"
Effective width	10' 2"	6' 6"	7' 2"
Roadway width	22' 8"	23' 3"	31' 3"
Construction Locations			
Ped/Auto Conflicts at Corners:			
Ped/Auto Conflicts at Midblock:			
Ped/Ped Conflicts:			yes
Activity Nodes:			
MBTA Bus Stops or Station Entrances:			
Other Obstructions:	vending carts – when it rains, carts pull under overhang, obstructing sidewalks		
Pedestrian Volumes:	high	high	high
Traffic Volumes:	none	moderate	moderate

HOWARD/STEIN-HUDSON ASSOCIATES, INC.

Boston Crossing Street Segment Pedestrian Analysis

Street: Hayward Pl. Segment: Washington to Harrison Ave. Ext.

Date: 4/5 Time: 10:30 am Surveyor: LG	Side: north Section: Washington to Harrison Ave Ext	Side: South Section: Washington to Harrison Ave. Ext.	Side: Section:
Total sidewalk width Effective width Roadway width	no sidewalk except for ~~small piece at west~~ end – 8' 6" 38' 1"	8' 6" 5' 7" 38' 1"	
Construction Locations			
Ped/Auto Conflicts at Corners:			
Ped/Auto Conflicts at Midblock:	no conflicts – all parking		
Ped/Ped Conflicts:			
Activity Nodes:			
MBTA Bus Stops or Station Entrances:		old unused station entance	
Other Obstructions:	parked cars		
Pedestrian Volumes:	light	light	
Traffic Volumes:	light	none	

HOWARD/STEIN-HUDSON ASSOCIATES, INC.

Boston Crossing Street Segment Pedestrian Analysis

Street: Harrison Ave Ext Segment: DeLafayette to Essex

Date: 4/5 Time: 10:15 am Surveyor: LG	Side: east Section: DeLafayette to Essex	Side: west Section: DeLafayette to Hayward Pl.	Side: west Section: Hayward Pl. to Essex
Total sidewalk width	11' 1"	8' 6"	7' 5"
Effective width	4' 0"	2' 9"	5' 2"
Roadway width	37' 7"	37' 7"	30' 8"
Construction Locations			
Ped/Auto Conflicts at Corners:	Harrison Ext. / Essex		Harrison Ext. / Essex
Ped/Auto Conflicts at Midblock:			
Ped/Ped Conflicts:			
Activity Nodes:			
MBTA Bus Stops or Station Entrances:			
Other Obstructions:	delivery activity at corner of DeLafayette and Harrison Ext.	raised grating and very uneven sidewalk	
Pedestrian Volumes:	light	light	light
Traffic Volumes:	light	light	light

HOWARD/STEIN-HUDSON ASSOCIATES, INC.

Boston Crossing Street Segment Pedestrian Analysis

Street: Ave. deLafayette Segment: Chauncy to Washington

Date: 4/5 Time: 10:00 am Surveyor: LG	Side: north Section: Chauncy to Washington	Side: South Section: Chauncy to Harrison Ave. Ext	Side: South Section: Harrison Ave. Ext to Washington
Total sidewalk width	8' 1"	8' 2"	9' 9"
Effective width	1' 3"	5' 3"	4' 1"
Roadway width	57' 8" including 6' median strip	57' 8"	57' 8" including median strip
Construction Locations			
Ped/Auto Conflicts at Corners:			
Ped/Auto Conflicts at Midblock:			
Ped/Ped Conflicts:			
Activity Nodes:		Post office	
MBTA Bus Stops or Station Entrances:			
Other Obstructions:			
Pedestrian Volumes:	light	light	
Traffic Volumes:	light	light	

HOWARD/STEIN-HUDSON ASSOCIATES, INC.

Boston Crossing Street Segment Pedestrian Analysis

Street: DeLafayette Segment: Chauncy to Kingston

Date: 4/5 Time: 3:45pm Surveyor: DG	Side: north Section: Chauncy to Kingston	Side: South Section: Chauncy to Kingston	Side: Section:
Total sidewalk width	no sidewalk	8'	
Effective width		1' 4"	
Roadway width		39' 2"	
Construction Locations	Boston Edison Substation construction obscures sidewalk		
Ped/Auto Conflicts at Corners:			
Ped/Auto Conflicts at Midblock:			
Ped/Ped Conflicts:			
Activity Nodes:			
MBTA Bus Stops or Station Entrances:			
Other Obstructions:		trees with grates take up most of sidewalk	
Pedestrian Volumes:	none	moderate	
Traffic Volumes:	light	light	

HOWARD/STEIN-HUDSON ASSOCIATES, INC.

Boston Crossing Street Segment Pedestrian Analysis

Street: Chauncy Segment: Summer to DeLafayette

Date: 4/4 Time: 11 am Surveyor: DG	Side: west Section: Summer to Bedford	Side: west Section: Bedford to DeLafayette	Side: Section:
Total sidewalk width	7' 5"	7' 9"	
Effective width	1' 5"	1' 3"	
Roadway width	33' 6"	32' 6"	
Construction Locations			
Ped/Auto Conflicts at Corners:		ped conflict w cars taking lift onto Chauncy from Bedford	
Ped/Auto Conflicts at Midblock:	Peds entering/exiting (T) stop near Chauncy/Summer especially in ~~peak~~ conflict w. cars entering/exiting garage		
Ped/Ped Conflicts:		ped conflict dodging trees	
Activity Nodes:	(T) stop, loading zone for Jordans, employee entrance for Jordans		
MBTA Bus Stops or Station Entrances:			
Other Obstructions:	entrance/exit for Lafayette Pl. garage	trees w grates take up entire sidewalk	
Pedestrian Volumes:	moderate	moderate	
Traffic Volumes:	high	high	

HOWARD/STEIN-HUDSON ASSOCIATES, INC.

Boston Crossing Street Segment Pedestrian Analysis

Street: KINGSTON Segment: SUMMER TO BEDFORD

Date: 4-5-89 Time: 10:00 AM Surveyor: LG	Side: WEST Section: SUMMER TO BEDFORD	Side: EAST Section: SUMMER TO BEDFORD	Side: Section:
Total sidewalk width	7' 6"	8' 5"	
Effective width	4' 3"	4' 6"	
Roadway width	26' 6"	26' 6"	
Construction Locations			
Ped/Auto Conflicts at Corners:	SUMMER	SUMMER	
Ped/Auto Conflicts at Midblock:			
Ped/Ped Conflicts:			
Activity Nodes:	PARKING LOT MIDBLOCK		
MBTA Bus Stops or Station Entrances:			
Other Obstructions:	CARS IN SIDEWALK AT PARKING LOT MID BLOCK (SPORADIC)		
Pedestrian Volumes:	LIGHT	LIGHT	
Traffic Volumes:	HIGH	HIGH	

HOWARD/STEIN-HUDSON ASSOCIATES, INC.

Boston Crossing Street Segment Pedestrian Analysis

Street: KINGSTON Segment: BEDFORD TO ESSEX

Date: 4-5-89 Time: 3:45 Surveyor: DG	Side: WEST Section: BEDFORD TO ESSEX	Side: EAST Section: BEDFORD TO ESSEX	Side: Section:
Total sidewalk width	4' 8"	10' 2"	
Effective width	0	5' 8"	
Roadway width	35' 2"	35' 2"	
Construction Locations	BOSTON EDISON SUB STATION		
Ped/Auto Conflicts at Corners:			
Ped/Auto Conflicts at Midblock:			
Ped/Ped Conflicts:			
Activity Nodes:			
MBTA Bus Stops or Station Entrances:			
Other Obstructions:	DEBRIS ON SIDEWALK; PED. COMPETE WITH TRAFFIC IN STREET	CARS EXITING KINGSTON/BEDFORD GARAGE	
Pedestrian Volumes:	LIGHT	LIGHT	
Traffic Volumes:	HIGH	HIGH	

HOWARD/STEIN-HUDSON ASSOCIATES, INC.

Boston Crossing Street Segment Pedestrian Analysis

Street: BEDFORD Segment: KINGSTON TO LINCOLN

Date: 4-5-89 Time: 3:10 PM Surveyor: DG	Side: NORTH Section: KINGSTON TO LINCOLN	Side: SOUTH Section: KINGSTON TO COLUMBIA	Side: SOUTH Section: COLUMBIA TO LINCOLN
Total sidewalk width	6'9"	NO SIDEWALK	9'2"
Effective width	4'4"	KINGSTON / BEDFORD GARAGE	5'
Roadway width	53'5"		26'6"
Construction Locations			
Ped/Auto Conflicts at Corners:			
Ped/Auto Conflicts at Midblock:			
Ped/Ped Conflicts:			
Activity Nodes:	99 SUMMER		
MBTA Bus Stops or Station Entrances:			
Other Obstructions:		KINGSTON / BEDFORD GARAGE'S ENTRANCE ENCOMPASES TOTAL SIDEWALK	DELI SIGN
Pedestrian Volumes:	LIGHT		LIGHT
Traffic Volumes:	MODERATE	MODERATE	MODERATE

HOWARD/STEIN-HUDSON ASSOCIATES, INC.

Boston Crossing Street Segment Pedestrian Analysis

Street: BEDFORD Segment: CHAUNCY TO KINGSTON

Date: 4-4-89 Time: 10:45 Surveyor: DG	Side: SOUTH Section: CHAUNCY TO KINGSTON	Side: NORTH Section: CHAUNCY TO KINGSTON	Side: Section:
Total sidewalk width	7' 9"	7'	
Effective width	1' 4"	3' 4"	
Roadway width	44"	44"	
Construction Locations	EDISON SUB. STATION TEMP. SIDEWALK FROM MIDBLOCK TO KINGSTON		
Ped/Auto Conflicts at Corners:		PED. & CARS ENTERING/EXITING LAFAYETTE GARAGE	
Ped/Auto Conflicts at Midblock:			
Ped/Ped Conflicts:	BUS PATRONS BLOCK SIDEWALK AT BEDFORD/CHAUNCY		
Activity Nodes:	BUS STOP BEDFORD/CHAUNCY		
MBTA Bus Stops or Station Entrances:	BEDFORD/CHAUNCY		
Other Obstructions:	TREE GRATE OBSTRUCTS SIDEWALK WIDTH IN ONE POINT		
Pedestrian Volumes:	MODERATE	LIGHT	
Traffic Volumes:	MODERATE	MODERATE	

HOWARD/STEIN-HUDSON ASSOCIATES, INC.

Boston Crossing Street Segment Pedestrian Analysis

Street: LINCOLN Segment: BEDFORD TO ESSEX

Date: 4-5-89 Time: 3:30 PM Surveyor: DG	Side: WEST Section: BEDFORD TO ESSEX	Side: EAST Section: BEDFORD TO ESSEX	Side: Section:
Total sidewalk width	7'3"	NO SIDEWALK	
Effective width	4'7"		
Roadway width	23'	23'	
Construction Locations		ENCOMPASES ENTIRE SIDEWALK 1.25 SUMMER CONSTRUC.	
Ped/Auto Conflicts at Corners:			
Ped/Auto Conflicts at Midblock:			
Ped/Ped Conflicts:			
Activity Nodes:			
MBTA Bus Stops or Station Entrances:			
Other Obstructions:	ENTRANCE TO PARKING LOT	PED CROSS STREET OR TRAVEL IN STREET FOR LACK OF SIDEWALK	
Pedestrian Volumes:	MODERATE	LIGHT	
Traffic Volumes:	MODERATE	MODERATE	

HOWARD/STEIN-HUDSON ASSOCIATES, INC.

Boston Crossing Street Segment Pedestrian Analysis

Street: ESSEX Segment: COLUMBIA TO LINCOLN

Date: 4-5-89 Time: 3:15 PM Surveyor: DG	Side: NORTH Section: COLUMBIA TO LINCOLN	Side: Section:	Side: Section:
Total sidewalk width	15'		
Effective width	3' 8"		
Roadway width	38' 1" 19'7" OFF RAMP		
Construction Locations			
Ped/Auto Conflicts at Corners:			
Ped/Auto Conflicts at Midblock:			
Ped/Ped Conflicts:			
Activity Nodes:			
MBTA Bus Stops or Station Entrances:			
Other Obstructions:			
Pedestrian Volumes:	LIGHT		
Traffic Volumes:	HIGH		

HOWARD/STEIN-HUDSON ASSOCIATES, INC.

Boston Crossing Street Segment Pedestrian Analysis

Street: COLUMBIA Segment: ESSEX TO BEDFORD

Date: 4-5-89 Time: 3:15 PM Surveyor: DG	Side: WEST Section: ESSEX TO BEDFORD	Side: EAST Section: ESSEX TO BEDFORD	Side: Section:
Total sidewalk width	8' 1"	5' 9"	
Effective width	3' 3"	3' 4"	
Roadway width	18' 8"	18' 8"	
Construction Locations			
Ped/Auto Conflicts at Corners:			
Ped/Auto Conflicts at Midblock:			
Ped/Ped Conflicts:			
Activity Nodes:			
MBTA Bus Stops or Station Entrances:			
Other Obstructions:	BROKEN SIDEWALKS EXIT FROM KINGSTON/ BEDFORD GARAGE		
Pedestrian Volumes:	LIGHT	LIGHT	
Traffic Volumes:	LIGHT	LIGHT	

HOWARD/STEIN-HUDSON ASSOCIATES, INC.

Boston Crossing Street Segment Pedestrian Analysis

Street: CHURCH GREEN Segment: LINCOLN TO SUMMER

Date: 4-5-89 Time: 3:35 PM Surveyor: DG	Side: WEST Section: LINCOLN TO SUMMER	Side: Section:	Side: Section:
Total sidewalk width	13' 4"		
Effective width	5' 6"		
Roadway width	31' 7"		
Construction Locations			
Ped/Auto Conflicts at Corners:			
Ped/Auto Conflicts at Midblock:			
Ped/Ped Conflicts:			
Activity Nodes:			
MBTA Bus Stops or Station Entrances:	--		
Other Obstructions:	BIG GRATE		
Pedestrian Volumes:	HIGH		
Traffic Volumes:	HIGH		

HOWARD/STEIN-HUDSON ASSOCIATES, INC.

Boston Crossing Street Segment Pedestrian Analysis

Street: Chauncy St Segment: Summer to Delafayette

Date: 4/4 Time: 11 am Surveyor: DG	Side: east Section: Summer to Bedford	Side: east Section: Bedford to delafayette	Side: Section:
Total sidewalk width	7' 4"	9' 8"	
Effective width	4' 5"	3'	
Roadway width	33' 6"	32 6"	
Construction Locations		Boston Edison Substation does not impede this sidewalk	
Ped/Auto Conflicts at Corners:	Corner of Chauncy/ Summer at crosswalk and light	ped conflict with autos taking left onto Chauncy from Bedford	
Ped/Auto Conflicts at Midblock:			
Ped/Ped Conflicts:	in front of mailboxes beside 38 Chauncy St		
Activity Nodes:	Windsor Button - 36 Chauncy Jackie's Sub Shop - 56 Chauncy		
MBTA Bus Stops or Station Entrances:			
Other Obstructions:			
Pedestrian Volumes:	moderate	moderate	
Traffic Volumes:	high	high	

HOWARD/STEIN-HUDSON ASSOCIATES, INC.

Boston Crossing Street Segment Pedestrian Analysis

Street: SUMMER Segment: OTIS TO CHURCH GREEN

Date: 4-5-89 Time: 10:00 AM Surveyor: LG	Side: NORTH Section: OTIS TO CHURCH GREEN	Side: SOUTH Section: KINGSTON TO CHURCH GREEN	Side: Section:
Total sidewalk width	12' 9"	8' 9"	
Effective width	7' 2"	6' 9"	
Roadway width	38' 4"	38' 4"	
Construction Locations			
Ped/Auto Conflicts at Corners:	OTIS & SUMMER	KINGSTON	
Ped/Auto Conflicts at Midblock:			
Ped/Ped Conflicts:			
Activity Nodes:		BURGER KING	
MBTA Bus Stops or Station Entrances:			
Other Obstructions:		FLOWER SHOP & FLOWERS ON SIDEWALK	
Pedestrian Volumes:	LIGHT	MODERATE	
Traffic Volumes:	LIGHT	LIGHT	

HOWARD/STEIN-HUDSON ASSOCIATES, INC.

Boston Crossing Street Segment Pedestrian Analysis

Street: SUMMER Segment: ARCH TO OTIS

Date: 4-5-89 Time: 9:30 AM Surveyor: DG	Side: NORTH Section: ARCH TO OTIS	Side: SOUTH Section: ARCH TO OTIS	Side: Section:
Total sidewalk width	11'	16' 3"	
Effective width	6' 4"	10' 2"	
Roadway width	31' 1"	31' 1"	
Construction Locations			
Ped/Auto Conflicts at Corners:	ARCH / SUMMER CROSSING ARCH ARCH / SUMMER CROSSING SUMMER		
Ped/Auto Conflicts at Midblock:			
Ped/Ped Conflicts:			
Activity Nodes:	CVS, McDONALDS	RUDIS, SHOE STORE BANKS	
MBTA Bus Stops or Station Entrances:	BUS STOP - OTIS		
Other Obstructions:	TREE, GRATES NEWSPAPER BOXES		
Pedestrian Volumes:	HIGH	HIGH	
Traffic Volumes:	LIGHT	LIGHT	

HOWARD/STEIN-HUDSON ASSOCIATES, INC.

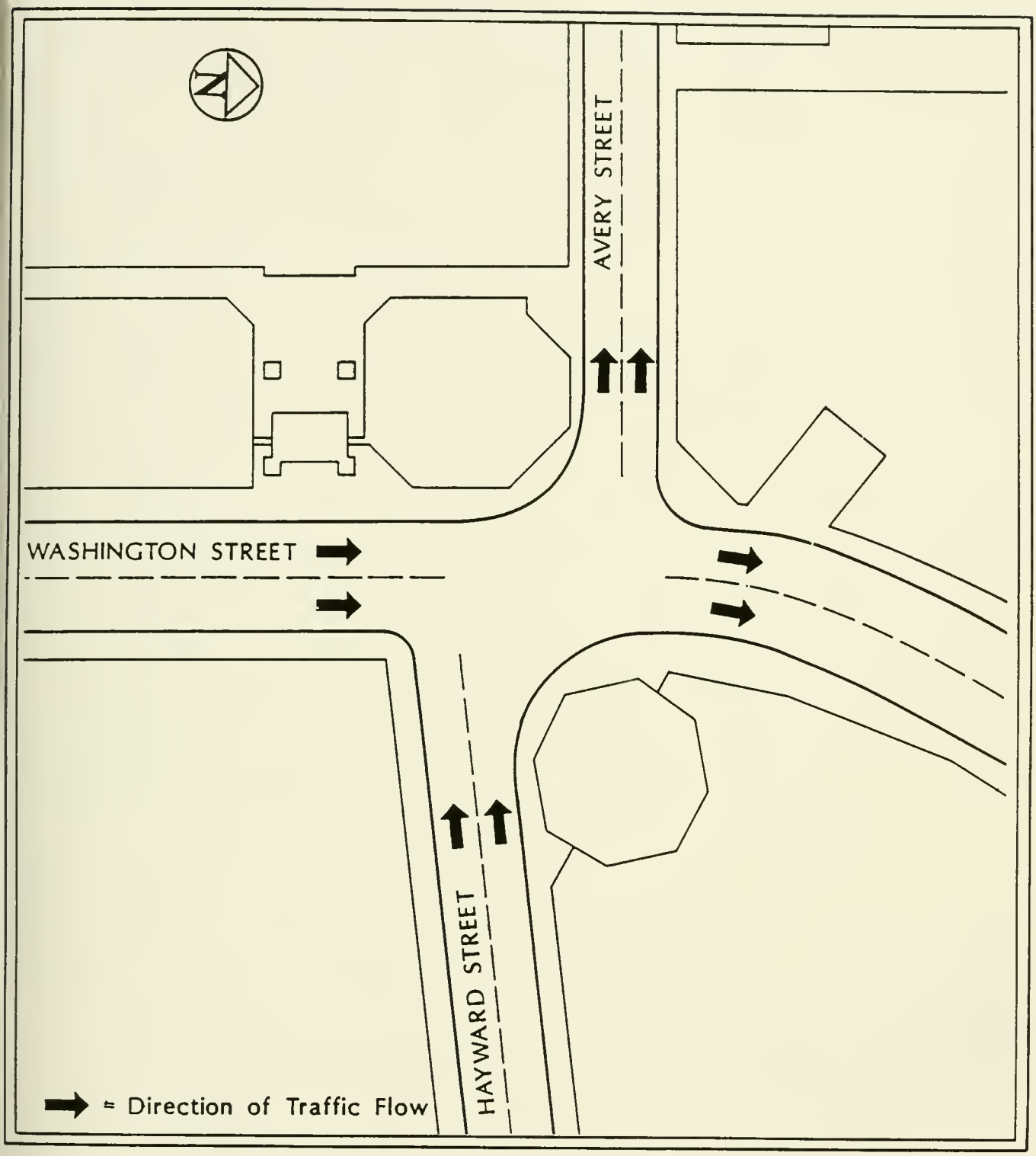
Boston Crossing Street Segment Pedestrian Analysis

Street: Summer Segment: Washington to Chauncy/Arch

Date: 4/5 Time: 9am Surveyor: DG	Side: north Section: Washington to Hawley	Side: north Section: Hawley to Arch	Side: south Section: Washington to Chauncy
Total sidewalk width	12' 8"	22'	21' 4"
Effective width	8' 3"	10' 2"	16' 3"
Roadway width	38' 3"	27' 9"	38' 3"
Construction Locations			
Ped/Auto Conflicts at Corners:	only when trucks or city/emergency vehicles enter the pedestrian area	Arch/Summer	
Ped/Auto Conflicts at Midblock:			
Ped/Ped Conflicts:	peds conflict when exiting and entering (T) stop		
Activity Nodes:	entrance(s) to Filene's, Filene's windows, (T) entrance/exits, Au Bon Pain	entrance to 101 Arch, Long's jewelry, bank machine, bank	entrance to Jordan's, Jordan's window, telephone stand
MBTA Bus Stops or Station Entrances:	Corner of Summer/Washington on Summer		
Other Obstructions:	Au Bon Pain outdoor seating, benches, bicycle racks, planters in downtown crossing - adequate room	trees with big pits, coffee stand sign, newspaper stands, cobblestone crosswalk	hydrants, telephones
Pedestrian Volumes:	high	high	high
Traffic Volumes:	light	light	light

Proposed Improvements at

Washington Street/Hayward Place and Avery Street



WASHINGTON/HAYWARD/AVERY INTERSECTION
GEOMETRY AND TRAFFIC FLOW PATTERN

BOSTON CROSSING

1995 No Build LOS Analysis

Existing Roadway Network

TREMONT ST/TEMPLE PL

1995 NO BUILD AM PEAK WITH EXISTING NETWORK

Date: 04-06-1989 Time: 17:37:52

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=1AM GEOMETRICS=1AM SIGNAL=1AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
WB	TEMPLE PL	207	0	0	207	1	0	0	9.0	0.0	0.0	24
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	TREMONT ST	0	1165	0	1165	0	3	0	0.0	10.0	0.0	40

TOTAL VOLUME = 1372

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	0.0%	N	0	0	.000	0		9.0	0
WB	1.0%	2.0%	Y	10	0	.960	200	Y	9.0	3
NB	0.0%	0.0%	N	0	0	.000	0		13.0	0
SB	-1.0%	2.0%	N	0	20	.960	300	Y	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1					*											*	27.3	4	A
2								*						*			44.7	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	207	0	0	.960	216	0	0
NB	0	0	0	.000	0	0	0
SB	0	1165	0	.960	0	1214	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
WB	LT	216	1	1.00	216	1.00	0.00
SB	TH	1214	3	1.10	1335	0.00	0.00

TREMONT ST/TEMPLE PL
1995 NO BUILD AM PEAK WITH EXISTING NETWORK
date: 04-06-1989 time: 17:37:52

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	LT	1800	1	0.900	0.990	0.995	0.849	1.000	0.900	1.000	0.950	1158
SB	TH	1800	3	0.933	0.990	1.005	1.000	0.972	0.900	1.000	1.000	4388

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	LT	216	1158	0.19	0.34	396	0.54	*
SB	TH	1335	4388	0.30	0.56	2450	0.54	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.49 TOTAL V/C= 0.54

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	LT	0.54	*	0.34	80.0	16.19	396	0.69	1.00	16.88	C	3.2	10
SB	TH	0.54	*	0.56	80.0	8.52	2450	0.11	0.85	7.34	B	11.9	37

DIR	STREET	DELAY	LOS
WB	TEMPLE PL	16.88	C
SB	TREMONT ST	7.34	B

INTERSECTION DELAY = 8.66 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

TREMONT ST/TEMPLE PL

1995 NO BUILD PM PEAK WITH EXISTING NETWORK

Date: 04-06-1989 Time: 17:42:26

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=1PM GEOMETRICS=1PM SIGNAL=1PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
WB	TEMPLE PL	302	0	0	302	1	0	0	9.0	0.0	0.0	24
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	TREMONT ST	0	1658	0	1658	0	3	0	0.0	10.0	0.0	40

TOTAL VOLUME = 1960

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	0.0%	N	0	0	.000	0		9.0	0
WB	1.0%	2.0%	Y	10	0	.910	200	Y	9.0	3
NB	0.0%	0.0%	N	0	0	.000	0		13.0	0
SB	-1.0%	2.0%	N	0	20	.910	300	Y	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1					*											*	27.8	4	A
2								*						*			44.2	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	302	0	0	.910	332	0	0
NB	0	0	0	.000	0	0	0
SB	0	1658	0	.910	0	1822	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
WB	LT	332	1	1.00	332	1.00	0.00
SB	TH	1822	3	1.10	2004	0.00	0.00

TREMONT ST/TEMPLE PL
1995 NO BUILD PM PEAK WITH EXISTING NETWORK
date: 04-06-1989 time: 17:42:27

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	LT	1800	1	0.900	0.990	0.995	0.849	1.000	0.900	1.000	0.950	1158
SB	TH	1800	3	0.933	0.990	1.005	1.000	0.972	0.900	1.000	1.000	4388

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	LT	332	1158	0.29	0.35	402	0.83	*
SB	TH	2004	4388	0.46	0.55	2427	0.83	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.74 TOTAL V/C= 0.83

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	LT	0.83	*	0.35	80.0	18.17	402	10.90	1.00	29.08	D	5.9	19
SB	TH	0.83	*	0.55	80.0	11.18	2427	2.06	0.85	11.25	8	18.1	55

DIR	STREET	DELAY	LOS
WB	TEMPLE PL	29.08	D
SB	TREMONT ST	11.25	8

INTERSECTION DELAY = 13.78 INTERSECTION LOS=8

THE EXISTING TIMING IS OPTIMAL

TREMONT ST/WEST ST

1995 NO BUILD AM PEAK WITH EXISTING NETWORK

Date: 04-06-1989 Time: 17:45:15

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=2AM GEOMETRICS=2AM SIGNAL=2AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
WB	WEST ST	460	0	0	460	1	0	0	12.0	0.0	0.0	24
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	TREMONT ST	0	1372	0	1372	0	3	0	0.0	10.0	0.0	40

TOTAL VOLUME = 1832

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	0.0%	N	0	0	.000	0		9.0	0
WB	1.0%	2.0%	Y	10	0	.960	200	Y	9.0	3
NB	0.0%	0.0%	N	0	0	.000	0		13.0	0
SB	-1.0%	2.0%	N	0	20	.960	300	Y	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1					*											*	36.7	4	A
2								*						*			35.3	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	460	0	0	.960	479	0	0
NB	0	0	0	.000	0	0	0
SB	0	1372	0	.960	0	1429	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
WB	LT	479	1	1.00	479	1.00	0.00
SB	TH	1429	3	1.10	1572	0.00	0.00

TREMONT ST/WEST ST

1995 NO BUILD AM PEAK WITH EXISTING NETWORK

date: 04-06-1989 time: 17:45:16

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	LT	1800	1	1.000	0.990	0.995	0.849	1.000	0.900	1.000	0.950	1287
SB	TH	1800	3	0.933	0.990	1.005	1.000	0.972	0.900	1.000	1.000	4388

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	LT	479	1287	0.37	0.46	590	0.81	*
SB	TH	1572	4388	0.36	0.44	1937	0.81	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.73 TOTAL V/C= 0.81

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	LT	0.81	*	0.46	80.0	14.19	590	7.01	1.00	21.20	C	6.6	21
SB	TH	0.81	*	0.44	80.0	14.78	1937	2.29	0.85	14.51	B	17.7	54

DIR	STREET	DELAY	LOS
WB	WEST ST	21.20	C
SB	TREMONT ST	14.51	B

INTERSECTION DELAY = 16.07 INTERSECTION LOS=C

THE EXISTING TIMING IS OPTIMAL

TREMONT ST/WEST ST

1995 NO BUILD PM PEAK WITH EXISTING NETWORK

Date: 04-06-1989 Time: 17:47:57

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=2PM GEOMETRICS=2PM SIGNAL=2PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
WE	WEST ST	610	0	0	610	1	0	0	12.0	0.0	0.0	24
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	TREMONT ST	0	1960	0	1960	0	3	0	0.0	10.0	0.0	40

TOTAL VOLUME = 2570

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	0.0%	N	0	0	.000	0		9.0	0
WB	1.0%	2.0%	Y	10	0	.920	200	Y	9.0	3
NE	0.0%	0.0%	N	0	0	.000	0		13.0	0
SB	-1.0%	2.0%	N	0	20	.920	300	Y	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1					*											*	40.3	4	A
2								*						*			41.7	4	A

CYCLE= 90.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	610	0	0	.920	663	0	0
NB	0	0	0	.000	0	0	0
SB	0	1960	0	.920	0	2130	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
WB	LT	663	1	1.00	663	1.00	0.00
SB	TH	2130	3	1.10	2343	0.00	0.00

TREMONT ST/WEST ST

1995 NO BUILD PM PEAK WITH EXISTING NETWORK

date: 04-06-1989 time: 17:47:58

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	LT	1800	1	1.000	0.990	0.995	0.849	1.000	0.900	1.000	0.950	1287
SB	TH	1800	3	0.933	0.990	1.005	1.000	0.972	0.900	1.000	1.000	4388

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	LT	663	1287	0.52	0.45	576	1.15	*
SB	TH	2343	4388	0.53	0.46	2035	1.15	*

CYCLE= 90.0 LOST= 8.0 SUM V/S CRIT= 1.05 TOTAL V/C= 1.15

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	LT	1.15	*	0.45	90.0	21.54	576	68.29	1.00	89.83	F	26.1	79
SB	TH	1.15	*	0.46	90.0	21.10	2035	57.73	0.85	67.01	F	65.8	198

DIR	STREET	DELAY	LOS
WB	WEST ST	89.83	F
SB	TREMONT ST	67.01	F

INTERSECTION DELAY = 72.04 INTERSECTION LOS=F

THE EXISTING TIMING IS OPTIMAL

TREMONT ST/AVERY ST

1995 NO BUILD AM PEAK WITH EXISTING NETWORK

Date: 04-06-1989 Time: 17:55:18

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=3AM GEOMETRICS=3AM SIGNAL=3AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
WB	AVERY ST	0	0	0	0	0	0	0	0.0	0.0	0.0	24
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	TREMONT ST	134	1724	0	1858	1	3	0	10.0	10.0	0.0	40

TOTAL VOLUME = 1858

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	0.0%	N	0	0	.000	0		9.0	0
WB	1.0%	2.0%	Y	10	0	.000	400	Y	9.0	3
NB	0.0%	0.0%	N	0	0	.000	0		13.0	0
SB	-1.0%	2.0%	N	0	20	.960	700	Y	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1													*	*			56.0	4	A
2								*				*				*	16.0	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	0	0	0	.000	0	0	0
NB	0	0	0	.000	0	0	0
SB	134	1724	0	.960	140	1796	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
SB	LT	140	1	1.00	140	1.00	0.00
SB	TH	1796	3	1.10	1975	0.00	0.00

TREMONT ST/AVERY ST

1995 NO BUILD AM PEAK WITH EXISTING NETWORK

date: 04-06-1989 time: 17:55:19

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
SB	LT	1800	1	0.933	0.990	1.005	1.000	1.000	0.900	1.000	0.950	1429
SB	TH	1800	3	0.933	0.990	1.005	1.000	0.972	0.900	1.000	1.000	4388

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
SB	LT	140	1429	0.10	0.70	1001	0.14	
SB	TH	1975	4388	0.45	0.70	3072	0.64	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.45 TOTAL V/C= 0.50

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
SB	LT	0.14		0.70	80.0	3.03	1001	0.00	1.00	3.03	A	0.9	4
SB	TH	0.64	*	0.70	80.0	4.98	3072	0.36	0.85	4.54	A	12.0	37

DIR	STREET	DELAY	LOS
SB	TREMONT ST	4.44	A

INTERSECTION DELAY = 4.44 INTERSECTION LOS=A

for chosen cycle length 80.0

suggested timing phase 1 is 72.0 secs green, 4.0 secs yellow + red clear

suggested timing phase 2 is 0.0 secs green, 4.0 secs yellow + red clear

TREMONT ST/AVERY ST
1995 NO BUILD PM PEAK WITH EXISTING NETWORK
Date: 04-06-1989 Time: 17:58:58

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=3PM GEOMETRICS=3PM SIGNAL=3PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
WB	AVERY ST	0	0	0	0	0	0	0	0.0	0.0	0.0	24
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	TREMONT ST	147	2407	0	2554	1	3	0	10.0	10.0	0.0	40

TOTAL VOLUME = 2554

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	0.0%	N	0	0	.000	0		9.0	0
WB	1.0%	2.0%	Y	10	0	.000	400	Y	9.0	3
NB	0.0%	0.0%	N	0	0	.000	0		13.0	0
SB	-1.0%	2.0%	N	0	20	.940	700	Y	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1													*	*			56.0	4	A
2								*				*				*	16.0	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	0	0	0	.000	0	0	0
NB	0	0	0	.000	0	0	0
SB	147	2407	0	.940	156	2561	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
SB	LT	156	1	1.00	156	1.00	0.00
SB	TH	2561	3	1.10	2817	0.00	0.00

TREMONT ST/AVERY ST

1995 NO BUILD PM PEAK WITH EXISTING NETWORK

date: 04-06-1989 time: 17:58:59

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
SB	LT	1800	1	0.933	0.990	1.005	1.000	1.000	0.900	1.000	0.950	1429
SB	TH	1800	3	0.933	0.990	1.005	1.000	0.972	0.900	1.000	1.000	4388

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
SB	LT	156	1429	0.11	0.70	1001	0.16	
SB	TH	2817	4388	0.64	0.70	3072	0.92	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.64 TOTAL V/C= 0.71

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
SB	LT	0.16		0.70	80.0	3.07	1001	0.00	1.00	3.07	A	1.0	4
SB	TH	0.92	*	0.70	80.0	7.64	3072	3.98	0.85	9.87	B	17.7	54

DIR	STREET	DELAY	LOS
SB	TREMONT ST	9.52	B

INTERSECTION DELAY = 9.52 INTERSECTION LOS=B

for chosen cycle length 80.0

suggested timing phase 1 is 72.0 secs green, 4.0 secs yellow + red clear

suggested timing phase 2 is 0.0 secs green, 4.0 secs yellow + red clear

BOYLSTON ST/TREMONT ST

1995 NO BUILD AM PEAK WITH EXISTING NETWORK

Date: 04-06-1989 Time: 18:36:38

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=4AM GEOMETRICS=4AM SIGNAL=4AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	BOYLSTON ST	0	870	157	1027	0	2	0	0.0	12.0	0.0	46
WB	BOYLSTON ST	0	0	0	0	0	0	0	0.0	0.0	0.0	24
NB	TREMONT ST	0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	TREMONT ST	551	902	273	1726	0	4	0	0.0	10.0	0.0	40

TOTAL VOLUME = 2753

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.930	600	Y	18.5	3
WB	0.0%	0.0%	N	10	0	.000	400	Y	18.5	3
NB	0.0%	0.0%	N	0	0	.000	500	Y	13.0	0
SB	-1.0%	2.0%	N	0	20	.930	700	Y	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1		*	*													*	25.3	4	A
2				*				*				*				*	0.0	20	A
3													*	*	*		26.7	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	870	157	.930	0	935	169
WB	0	0	0	.000	0	0	0
NB	0	0	0	.000	0	0	0
SB	551	902	273	.930	592	970	294

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	TH-RT	1104	2	1.05	1160	0.00	0.15
SB	LT-TH-RT	1856	4	1.10	2042	0.32	0.16

BOYLSTON ST/TREMONT ST
1995 NO BUILD AM PEAK WITH EXISTING NETWORK
date: 04-06-1989 time: 18:36:39

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH-RT	1800	2	1.000	0.990	1.000	1.000	0.979	0.900	0.977	1.000	3069
SB	LT-TH-RT	1600	4	0.933	0.990	1.005	1.000	0.979	0.900	0.976	1.000	5114

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH-RT	1160	3069	0.38	0.32	970	1.20	*
SB	LT-TH-RT	2042	5114	0.40	0.33	1708	1.20	*

CYCLE= 80.0 LOST=28.0 SUM V/S CRIT= 0.78 TOTAL V/C= 1.20

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH-RT	1.20	*	0.32	80.0	22.86	970	76.59	0.85	84.53	F	42.1	127
SB	LT-TH-RT	1.20	*	0.33	80.0	22.45	1708	72.97	0.85	81.10	F	68.1	205

DIR	STREET	DELAY	LOS
EB	BOYLSTON ST	84.53	F
SB	TREMONT ST	81.10	F

INTERSECTION DELAY = 82.34 INTERSECTION LOS=F

THE EXISTING TIMING IS OPTIMAL

BOYLSTON ST/TREMONT ST

1995 NO BUILD PM PEAK WITH EXISTING NETWORK

Date: 04-06-1989 Time: 18:41:07

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=4PM GEOMETRICS=4PM SIGNAL=4PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	BOYLSTON ST	0	861	331	1192	0	1	0	0.0	12.0	0.0	46
WB	BOYLSTON ST	0	0	0	0	0	0	0	0.0	0.0	0.0	24
NB	TREMONT ST	0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	TREMONT ST	427	1346	652	2425	0	4	0	0.0	10.0	0.0	40

TOTAL VOLUME = 3617

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK			PEDESTRIANS				ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.920	600	Y	18.5	3
WB	0.0%	0.0%	N	10	0	.000	400	Y	18.5	3
NB	0.0%	0.0%	N	0	0	.000	500	Y	13.0	0
SB	-1.0%	2.0%	N	0	20	.920	700	Y	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1		*	*													*	31.8	4	A
2				*				*				*				*	0.0	20	A
3													*	*	*		20.2	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	861	331	.920	0	936	360
WB	0	0	0	.000	0	0	0
NB	0	0	0	.000	0	0	0
SB	427	1346	652	.920	464	1463	709

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	TH-RT	1296	1	1.00	1296	0.00	0.28
SB	LT-TH-RT	2636	4	1.10	2899	0.18	0.27

BOYLSTON ST/TREMONT ST

1995 NO BUILD PM PEAK WITH EXISTING NETWORK

date: 04-06-1989 time: 18:41:08

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH-RT	2100	1	1.000	0.990	1.000	1.000	0.958	0.900	0.796	1.000	1428
SB	LT-TH-RT	1600	4	0.933	0.990	1.005	1.000	0.979	0.900	0.960	1.000	5027

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH-RT	1296	1428	0.91	0.40	567	2.28	*
SB	LT-TH-RT	2899	5027	0.58	0.25	1270	2.28	*

CYCLE= 80.0 LOST=28.0 SUM V/S CRIT= 1.48 TOTAL V/C= 2.28

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH-RT	2.28	*	0.40	80.0	118.97	567	450.63	0.85	484.16	F	235.2	706
SB	LT-TH-RT	2.28	*	0.25	80.0	40.12	1270	446.96	0.85	414.02	F	416.0	1247

DIR	STREET	DELAY	LOS
EB	BOYLSTON ST	484.16	F
SB	TREMONT ST	414.02	F

INTERSECTION DELAY =435.68 INTERSECTION LOS=F

THE EXISTING TIMING IS OPTIMAL

STUART ST/KNEELAND ST/WASHINGTON ST
1995 NO BUILD AM PEAK EXISTING NETWORK
Date: 04-06-1989 Time: 18:46:28

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=5AM GEOMETRICS=5AM SIGNAL=5AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	STUART ST	141	741	38	920	1	2	0	11.0	11.0	0.0	48
WB	KNEELAND ST	126	666	313	1105	0	2	1	0.0	11.0	11.0	48
NB	WASHINGTON ST	222	405	106	733	0	2	0	0.0	12.0	0.0	36
SB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	40

TOTAL VOLUME = 2758

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	Y	15	10	.920	200	Y	15.0	3
WB	0.0%	2.0%	Y	15	10	.920	200	Y	15.0	3
NB	0.0%	2.0%	Y	15	15	.920	200	Y	13.0	3
SB	0.0%	0.0%	N	0	0	.000	200	Y	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1					*	*	*										0.0	0	A
2	*	*	*		*	*	*					*				*	39.0	4	A
3				*				*	*	*	*						33.0	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	141	741	38	.920	153	805	41
WB	126	666	313	.920	137	724	340
NB	222	405	106	.920	241	440	115
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT	153	1	1.00	153	1.00	0.00
EB	TH-RT	847	2	1.05	889	0.00	0.05
WB	LT-TH	861	2	1.05	904	0.16	0.00
WB	RT	340	1	1.00	340	0.00	1.00
NB	LT-TH-RT	797	2	1.05	837	0.30	0.14

STUART ST/KNEELAND ST/WASHINGTON ST
1995 NO BUILD AM PEAK EXISTING NETWORK
date: 04-06-1989 time: 18:46:29

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.251	388
EB	TH-RT	1800	2	0.967	0.990	1.000	0.912	0.979	0.900	0.988	1.000	2735
WB	LT-TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.852	2643
WB	RT	1800	1	0.967	0.990	1.000	0.824	0.958	0.900	0.755	1.000	924
NB	LT-TH-RT	1800	2	1.000	0.990	1.000	0.912	0.969	0.900	0.965	0.926	2530

SUPPLEMENTAL WORKSHEET FOR
LEFT-TURN ADJUSTMENT FACTOR FLT
INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	No	Vo	Plto	LGo
EB	80	39	1	153	847	153	1.00	2	861	0.16	0

CALCULATIONS

DIR	Sop	Yo	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
EB	2650	0.325	19.258	0.337	1.000	19.732	0.000	0.000	3.339	0.251	0.251

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	153	388	0.39	0.49	189	0.81	*
EB	TH-RT	889	2735	0.33	0.49	1333	0.67	
WB	LT-TH	904	2643	0.34	0.49	1288	0.70	
WB	RT	340	924	0.37	0.49	450	0.76	
NB	LT-TH-RT	837	2530	0.33	0.41	1044	0.80	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.73 TOTAL V/C= 0.81

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	0.81	*	0.49	80.0	13.19	189	18.54	0.85	26.98	D	2.4	8
EB	TH-RT	0.67		0.49	80.0	11.84	1333	1.03	0.85	10.94	B	9.6	30
WB	LT-TH	0.70		0.49	80.0	12.14	1288	1.43	0.85	11.54	B	9.8	30
WB	RT	0.76		0.49	80.0	12.65	450	6.01	0.85	15.86	C	3.9	13
NB	LT-TH-RT	0.80	*	0.41	80.0	15.67	1044	3.81	0.85	16.56	C	10.4	32

DIR	STREET	DELAY	LOS
EB	STUART ST	13.29	B
WB	KNEELAND ST	12.72	B
NB	WASHINGTON ST	16.56	C

INTERSECTION DELAY = 13.94 INTERSECTION LOS=B

for chosen cycle length 80.0
suggested timing phase 1 is 0.0 secs green, 0.0 secs yellow + red clear
suggested timing phase 2 is 39.2 secs green, 4.0 secs yellow + red clear
suggested timing phase 3 is 32.8 secs green, 4.0 secs yellow + red clear

STUART ST/KNEELAND ST/WASHINGTON ST
1995 NO BUILD PM PEAK WITH EXISTING NETWORK
Date: 04-06-1989 Time: 18:52:05

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=5PM GEOMETRICS=5PM SIGNAL=5PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	STUART ST	175	740	73	988	1	2	0	11.0	11.0	0.0	48
WB	KNEELAND ST	105	843	201	1149	0	2	1	0.0	11.0	11.0	48
NB	WASHINGTON ST	82	204	216	502	0	2	0	0.0	12.0	0.0	36
SB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	40

TOTAL VOLUME = 2639

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	Y	15	10	.900	200	Y	15.0	3
WB	0.0%	2.0%	Y	15	10	.900	200	Y	15.0	3
NB	0.0%	2.0%	Y	15	15	.900	200	Y	13.0	3
SB	0.0%	0.0%	N	0	0	.000	200	Y	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1					*	*	*										0.0	0	A
2	*	*	*		*	*	*					*				*	51.7	4	A
3				*				*	*	*	*						20.3	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	175	740	73	.900	194	822	81
WB	105	843	201	.900	117	937	223
NB	82	204	216	.900	91	227	240
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
EB	LT	194	1	1.00	194	1.00	0.00
EB	TH-RT	903	2	1.05	949	0.00	0.09
WB	LT-TH	1053	2	1.05	1106	0.11	0.00
WB	RT	223	1	1.00	223	0.00	1.00
NB	LT-TH-RT	558	2	1.05	586	0.16	0.43

STUART ST/KNEELAND ST/WASHINGTON ST
1995 NO BUILD PM PEAK WITH EXISTING NETWORK
date: 04-06-1989 time: 18:52:06

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.206	319
EB	TH-RT	1800	2	0.967	0.990	1.000	0.912	0.979	0.900	0.978	1.000	2707
WB	LT-TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.877	2720
WB	RT	1800	1	0.967	0.990	1.000	0.824	0.958	0.900	0.755	1.000	924
NB	LT-TH-RT	1800	2	1.000	0.990	1.000	0.912	0.969	0.900	0.894	0.960	2433

SUPPLEMENTAL WORKSHEET FOR
LEFT-TURN ADJUSTMENT FACTOR FLT
INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	No	Vo	Plto	LGo
EB	80	52	1	194	903	194	1.00	2	1053	0.11	0

CALCULATIONS

DIR	Sop	Yo	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
EB	2789	0.378	34.580	0.217	1.000	17.152	0.000	0.000	5.192	0.206	0.206

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	194	319	0.61	0.65	207	0.94	*
EB	TH-RT	949	2707	0.35	0.65	1751	0.54	
WB	LT-TH	1106	2720	0.41	0.65	1759	0.63	
WB	RT	223	924	0.24	0.65	597	0.37	
NB	LT-TH-RT	586	2433	0.24	0.25	616	0.95	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.85 TOTAL V/C= 0.94

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	0.94	*	0.65	80.0	9.70	207	36.17	0.85	38.99	D	3.5	11
EB	TH-RT	0.54		0.65	80.0	5.84	1751	0.14	0.85	5.09	B	7.1	22
WB	LT-TH	0.63		0.65	80.0	6.40	1759	0.54	0.85	5.90	B	8.3	26
WB	RT	0.37		0.65	80.0	5.01	597	0.00	0.85	4.26	A	1.8	6
NB	LT-TH-RT	0.95	*	0.25	80.0	22.32	616	19.20	0.85	35.29	D	11.7	36

DIR	STREET	DELAY	LOS
EB	STUART ST	10.86	B
WB	KNEELAND ST	5.62	B
NB	WASHINGTON ST	35.29	D

INTERSECTION DELAY = 13.26 INTERSECTION LOS=B

for chosen cycle length 80.0
suggested timing phase 1 is 0.0 secs green, 0.0 secs yellow + red clear
suggested timing phase 2 is 51.6 secs green, 4.0 secs yellow + red clear
suggested timing phase 3 is 20.4 secs green, 4.0 secs yellow + red clear

LAGRANGE ST/BEACH ST/WASHINGTON ST
1995 NO BUILD AM PEAK EXISTING NETWORK
Date: 04-06-1989 Time: 18:59:42

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=6AM GEOMETRICS=6AM SIGNAL=6AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	LAGRANGE ST	29	0	0	29	1	0	0	12.0	0.0	0.0	22
WB	BEACH ST	0	0	90	90	0	0	1	0.0	0.0	12.0	28
NB	WASHINGTON ST	0	860	0	860	0	2	0	0.0	10.0	0.0	32
SB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	40

TOTAL VOLUME = 979

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	15	0	.900	200	Y	10.0	3
WB	0.0%	2.0%	Y	10	0	.900	200	Y	10.0	3
NB	0.0%	2.0%	N	15	15	.900	200	Y	17.0	3
SB	0.0%	0.0%	N	0	0	.000	200	Y	17.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*											*					3.9	4	A
2				*				*		*							63.3	4	A
3				*			*					*					15.8	4	A

CYCLE= 95.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	29	0	0	.900	32	0	0
WB	0	0	90	.900	0	0	100
NB	0	860	0	.900	0	956	0
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT	32	1	1.00	32	1.00	0.00
WB	RT	100	1	1.00	100	0.00	1.00
NB	TH	956	2	1.05	1003	0.00	0.00

LAGRANGE ST/BEACH ST/WASHINGTON ST
1995 NO BUILD AM PEAK EXISTING NETWORK
date: 04-06-1989 time: 18:59:43

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	1.000	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1524
WB	RT	1800	1	1.000	0.990	1.000	0.849	1.000	0.900	0.850	1.000	1157
NB	TH	1800	2	0.933	0.990	1.000	1.000	0.969	0.900	1.000	1.000	2900

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	32	1524	0.02	0.04	62	0.52	*
WB	RT	100	1157	0.09	0.17	193	0.52	*
NB	TH	1003	2900	0.35	0.67	1933	0.52	*

CYCLE= 95.0 LOST=12.0 SUM V/S CRIT= 0.45 TOTAL V/C= 0.52

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	0.52	*	0.04	95.0	33.94	62	1.74	1.00	35.68	D	0.8	3
WB	RT	0.52	*	0.17	95.0	27.45	193	0.57	0.85	23.82	C	2.2	7
NB	TH	0.52	*	0.67	95.0	6.14	1933	0.06	0.85	5.27	B	8.4	26

DIR	STREET	DELAY	LOS
EB	LAGRANGE ST	35.68	D
WB	BEACH ST	23.82	C
NB	WASHINGTON ST	5.27	B

INTERSECTION DELAY = 7.76 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

LAGRANGE ST/BEACH ST/WASHINGTON ST
1995 NO BUILD PM PEAK WITH EXISTING NETWORK
Date: 04-06-1989 Time: 19:03:45

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=6PM GEOMETRICS=6PM SIGNAL=6PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	LAGRANGE ST	28	0	0	28	1	0	0	12.0	0.0	0.0	22
WB	BEACH ST	0	0	324	324	0	0	1	0.0	0.0	12.0	28
NB	WASHINGTON ST	0	586	0	586	0	2	0	0.0	10.0	0.0	32
SB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	40

TOTAL VOLUME = 938

TRAFFIC & ROADWAY CONDITIONS

			AOJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	15	0	.900	200	Y	10.0	3
WB	0.0%	2.0%	Y	10	0	.900	200	Y	10.0	3
NB	0.0%	2.0%	N	15	15	.900	200	Y	17.0	3
SB	0.0%	0.0%	N	0	0	.000	200	Y	17.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*											*					3.0	4	A
2				*				*		*							34.5	4	A
3				*			*					*					45.5	4	A

CYCLE= 95.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	28	0	0	.900	31	0	0
WB	0	0	324	.900	0	0	360
NB	0	586	0	.900	0	651	0
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
EB	LT	31	1	1.00	31	1.00	0.00
WB	RT	360	1	1.00	360	0.00	1.00
NB	TH	651	2	1.05	684	0.00	0.00

LAGRANGE ST/BEACH ST/WASHINGTON ST
1995 NO BUILD PM PEAK WITH EXISTING NETWORK
date: 04-06-1989 time: 19:03:46

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	1.000	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1524
WB	RT	1800	1	1.000	0.990	1.000	0.849	1.000	0.900	0.850	1.000	1157
NB	TH	1800	2	0.933	0.990	1.000	1.000	0.969	0.900	1.000	1.000	2900

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	31	1524	0.02	0.03	48	0.65	*
WB	RT	360	1157	0.31	0.48	555	0.65	*
NB	TH	684	2900	0.24	0.36	1053	0.65	*

CYCLE= 95.0 LOST=12.0 SUM V/S CRIT= 0.57 TOTAL V/C= 0.65

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	0.65	*	0.03	95.0	34.57	48	20.94	1.00	55.51	E	1.0	4
WB	RT	0.65	*	0.48	95.0	14.22	555	2.09	0.85	13.86	B	4.9	16
NB	TH	0.65	*	0.36	95.0	19.16	1053	1.11	0.85	17.23	C	10.9	34

DIR	STREET	DELAY	LOS
EB	LAGRANGE ST	55.51	E
WB	BEACH ST	13.86	B
NB	WASHINGTON ST	17.23	C

INTERSECTION DELAY = 17.21 INTERSECTION LOS=C

THE EXISTING TIMING IS OPTIMAL

BOYLSTON ST/ESSEX ST/WASHINGTON ST
1995 NO BUILD AM PEAK WITH EXISTING NETWORK
Date: 04-06-1989 Time: 19:08:15

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=7AM GEOMETRICS=7AM SIGNAL=7AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	BOYLSTON ST	191	886	0	1077	1	2	0	11.0	11.0	0.0	28
WB	ESSEX ST	0	0	0	0	0	0	0	0.0	0.0	0.0	31
NB	WASHINGTON ST	0	538	440	978	0	2	1	0.0	11.0	11.0	36
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	36

TOTAL VOLUME = 2055

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	0	.930	200	Y	14.8	3
WB	0.0%	0.0%	N	0	0	.000	200		14.8	0
NB	0.0%	2.0%	N	0	0	.930	550	Y	16.0	3
SB	0.0%	0.0%	N	0	0	.000	750	Y	16.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*	*										*					25.6	4	A
2				*						*	*						28.4	4	A
3				*				*				*				*	0.0	18	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	191	886	0	.930	205	953	0
WB	0	0	0	.000	0	0	0
NB	0	538	440	.930	0	578	473
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
EB	LT	205	1	1.00	205	1.00	0.00
EB	TH	953	2	1.05	1000	0.00	0.00
NB	TH	578	2	1.05	607	0.00	0.00
NB	RT	473	1	1.00	473	0.00	1.00

BOYLSTON ST/ESSEX ST/WASHINGTON ST
1995 NO BUILD AM PEAK WITH EXISTING NETWORK
date: 04-06-1989 time: 19:08:16

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1473
EB	TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3101
NB	TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3101
NB	RT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	0.850	1.000	1318

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	205	1473	0.14	0.32	471	0.44	
EB	TH	1000	3101	0.32	0.32	991	1.01	*
NB	TH	607	3101	0.20	0.36	1102	0.55	
NB	RT	473	1318	0.36	0.36	469	1.01	*

CYCLE= 80.0 LOST=26.0 SUM V/S CRIT= 0.68 TOTAL V/C= 1.01

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	0.44		0.32	80.0	16.36	471	0.00	1.00	16.36	C	3.1	10
EB	TH	1.01	*	0.32	80.0	20.78	991	23.95	0.85	38.02	D	20.3	62
NB	TH	0.55		0.36	80.0	15.70	1102	0.28	0.85	13.59	B	8.3	26
NB	RT	1.01	*	0.36	80.0	19.70	469	34.01	0.85	45.65	E	11.2	34

DIR	STREET	DELAY	LOS
EB	BOYLSTON ST	34.33	D
NB	WASHINGTON ST	27.63	D

INTERSECTION DELAY = 31.16 INTERSECTION LOS=D

THE EXISTING TIMING IS OPTIMAL

BOYLSTON ST/ESSEX ST/WASHINGTON ST
1995 NO BUILD PM PEAK WITH EXISTING NETWORK
Date: 04-06-1989 Time: 19:25:41

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=7PM GEOMETRICS=7PM SIGNAL=7PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	BOYLSTON ST	381	1215	0	1596	1	2	0	11.0	11.0	0.0	28
WB	ESSEX ST	0	0	0	0	0	0	0	0.0	0.0	0.0	31
NB	WASHINGTON ST	0	425	509	934	0	2	1	0.0	11.0	11.0	36
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	36

TOTAL VOLUME = 2530

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	0	.910	200	Y	14.8	3
WB	0.0%	0.0%	N	0	0	.000	200		14.8	0
NB	0.0%	2.0%	N	0	0	.910	590	Y	16.0	3
SB	0.0%	0.0%	N	0	0	.000	750	Y	16.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*	*										*					27.9	4	A
2				*						*	*						26.1	4	A
3				*				*				*				*	0.0	18	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	381	1215	0	.910	419	1335	0
WB	0	0	0	.000	0	0	0
NB	0	425	509	.910	0	467	559
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT	419	1	1.00	419	1.00	0.00
EB	TH	1335	2	1.05	1402	0.00	0.00
NB	TH	467	2	1.05	490	0.00	0.00
NB	RT	559	1	1.00	559	0.00	1.00

BOYLSTON ST/ESSEX ST/WASHINGTON ST
1995 NO BUILD PM PEAK WITH EXISTING NETWORK
date: 04-06-1989 time: 19:25:42

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1473
EB	TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3101
NB	TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3101
NB	RT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	0.850	1.000	1318

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	419	1473	0.28	0.35	513	0.82	
EB	TH	1402	3101	0.45	0.35	1080	1.30	*
NB	TH	490	3101	0.16	0.33	1014	0.48	
NB	RT	559	1318	0.42	0.33	431	1.30	*

CYCLE= 80.0 LOST=26.0 SUM V/S CRIT= 0.88 TOTAL V/C= 1.30

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	0.82		0.35	80.0	18.05	513	8.24	1.00	26.28	D	7.0	22
EB	TH	1.30	*	0.35	80.0	23.57	1080	109.74	0.85	113.32	F	64.3	194
NB	TH	0.48		0.33	80.0	16.36	1014	0.00	0.85	13.91	B	7.0	22
NB	RT	1.30	*	0.33	80.0	23.93	431	118.30	0.85	120.89	F	28.6	87

DIR	STREET	DELAY	LOS
EB	BOYLSTON ST	93.30	F
NB	WASHINGTON ST	70.92	F

INTERSECTION DELAY = 85.12 INTERSECTION LOS=F

THE EXISTING TIMING IS OPTIMAL

BOYLSTON ST/ESSEX ST/WASHINGTON ST
1995 NO BUILD SAT PEAK WITH EXISTING NETWORK
Date: 04-06-1989 Time: 19:30:15

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=7SAT GEOMETRICS=7SAT SIGNAL=7SAT

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	BOYLSTON ST	331	919	0	1250	1	2	0	11.0	11.0	0.0	28
WB	ESSEX ST	0	0	0	0	0	0	0	0.0	0.0	0.0	31
NB	WASHINGTON ST	0	338	290	628	0	2	1	0.0	11.0	11.0	36
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	36

TOTAL VOLUME = 1878

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	0	.930	200	Y	14.8	3
WB	0.0%	0.0%	N	0	0	.000	200		14.8	0
NB	0.0%	2.0%	N	0	0	.930	550	Y	16.0	3
SB	0.0%	0.0%	N	0	0	.000	750	Y	16.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*	*										*					31.6	4	A
2				*						*	*						22.4	4	A
3				*				*				*				*	0.0	18	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	331	919	0	.930	356	988	0
WB	0	0	0	.000	0	0	0
NB	0	338	290	.930	0	363	312
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT	356	1	1.00	356	1.00	0.00
EB	TH	988	2	1.05	1038	0.00	0.00
NB	TH	363	2	1.05	382	0.00	0.00
NB	RT	312	1	1.00	312	0.00	1.00

BOYLSTON ST/ESSEX ST/WASHINGTON ST
1995 NO BUILD SAT PEAK WITH EXISTING NETWORK
date: 04-06-1989 time: 19:30:16

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1473
EB	TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3101
NB	TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3101
NB	RT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	0.850	1.000	1318

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	356	1473	0.24	0.40	582	0.61	
EB	TH	1038	3101	0.33	0.40	1226	0.85	*
NB	TH	382	3101	0.12	0.28	867	0.44	
NB	RT	312	1318	0.24	0.28	368	0.85	*

CYCLE= 80.0 LOST=26.0 SUM V/S CRIT= 0.57 TOTAL V/C= 0.85

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	0.61		0.40	80.0	14.65	582	1.34	1.00	16.00	C	4.8	15
EB	TH	0.85	*	0.40	80.0	16.70	1226	4.67	0.85	18.17	C	13.3	41
NB	TH	0.44		0.28	80.0	17.99	867	0.00	0.85	15.29	C	5.8	18
NB	RT	0.85	*	0.28	80.0	20.67	368	13.49	0.85	29.03	D	5.8	18

DIR	STREET	DELAY	LOS
EB	BOYLSTON ST	17.61	C
NB	WASHINGTON ST	21.47	C

INTERSECTION DELAY = 18.90 INTERSECTION LOS=C

THE EXISTING TIMING IS OPTIMAL

AVERY ST/HAYWARD ST/WASHINGTON ST
1995 NO BUILD AM PEAK EXISTING NETWORK
Date: 04-06-1989 Time: 19:34:17

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=8AM GEOMETRICS=8AM SIGNAL=8AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	AVERY ST	132	0	0	132	1	0	0	12.0	0.0	0.0	22
WB	HAYWARD ST	0	0	0	0	0	0	0	0.0	0.0	0.0	0
NB	WASHINGTON ST	0	667	59	726	0	2	0	0.0	12.0	0.0	36
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	0

TOTAL VOLUME = 858

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	Y	5	0	.900	200	Y	8.5	3
WB	0.0%	0.0%	N	0	0	.000	200	Y	8.5	0
NB	0.0%	2.0%	Y	10	0	.900	200	Y	12.0	3
SB	0.0%	0.0%	N	0	0	.000	200	Y	12.0	0

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*											*					19.9	4	A
2				*						*	*						52.1	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	132	0	0	.900	147	0	0
WB	0	0	0	.000	0	0	0
NB	0	667	59	.900	0	741	66
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT	147	1	1.00	147	1.00	0.00
NB	TH-RT	807	2	1.05	847	0.00	0.08

AVERY ST/HAYWARD ST/WASHINGTON ST
1995 NO BUILD AM PEAK EXISTING NETWORK
date: 04-06-1989 time: 19:34:18

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	1.000	0.990	1.000	0.875	1.000	0.900	1.000	0.950	1333
NB	TH-RT	1800	2	1.000	0.990	1.000	0.925	1.000	0.900	0.988	1.000	2930

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	147	1333	0.11	0.25	331	0.44	*
NB	TH-RT	847	2930	0.29	0.65	1910	0.44	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.40 TOTAL V/C= 0.44

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	0.44	*	0.25	80.0	19.31	331	0.00	1.00	19.31	C	2.5	8
NB	TH-RT	0.44	*	0.65	80.0	5.18	1910	0.00	0.85	4.41	A	6.2	20

DIR	STREET	DELAY	LOS
EB	AVERY ST	19.31	C
NB	WASHINGTON ST	4.41	A

INTERSECTION DELAY = 6.61 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

AVERY ST/HAYWARD ST/WASHINGTON ST
1995 NO BUILD PM PEAK WITH EXISTING NETWORK
Date: 04-06-1989 Time: 19:35:58

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=8PM GEOMETRICS=8PM SIGNAL=8PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	AVERY ST	146	0	0	146	1	0	0	12.0	0.0	0.0	22
WB	HAYWARD ST	0	0	0	0	0	0	0	0.0	0.0	0.0	0
NB	WASHINGTON ST	0	728	78	806	0	2	0	0.0	12.0	0.0	36
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	0

TOTAL VOLUME = 952

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	Y	5	0	.900	200	Y	8.5	3
WB	0.0%	0.0%	N	0	0	.000	200	Y	8.5	0
NB	0.0%	2.0%	Y	10	0	.900	200	Y	12.0	3
SB	0.0%	0.0%	N	0	0	.000	200	Y	12.0	0

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*											*					19.8	4	A
2				*						*	*						52.2	4	A

CYCLE= 60.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	145	0	0	.900	162	0	0
WB	0	0	0	.000	0	0	0
NB	0	728	78	.900	0	809	87
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
EB	LT	162	1	1.00	162	1.00	0.00
NB	TH-RT	896	2	1.05	940	0.00	0.10

AVERY ST/HAYWARD ST/WASHINGTON ST

1995 NO BUILD PM PEAK WITH EXISTING NETWORK

date: 04-06-1989 time: 19:35:59

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	1.000	0.990	1.000	0.875	1.000	0.900	1.000	0.950	1333
NB	TH-RT	1800	2	1.000	0.990	1.000	0.925	1.000	0.900	0.985	1.000	2923

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	162	1333	0.12	0.25	329	0.49	*
NB	TH-RT	940	2923	0.32	0.65	1908	0.49	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.44 TOTAL V/C= 0.49

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	0.49	*	0.25	80.0	19.62	329	0.00	1.00	19.62	C	2.7	9
NB	TH-RT	0.49	*	0.65	80.0	5.40	1908	0.00	0.85	4.59	A	6.9	22

DIR	STREET	DELAY	LOS
EB	AVERY ST	19.62	C
NB	WASHINGTON ST	4.59	A

INTERSECTION DELAY = 6.80 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

WASHINGTON ST/AVE DE LAFAYETTE
1995 NO BUILD AM PEAK EXISTING NETWORK
Date: 04-07-1989 Time: 08:13:40

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=9AM GEOMETRICS=9AM SIGNAL=9AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	22
WB	AVE DE LAFAYETTE	0	0	83	83	0	0	2	0.0	0.0	12.0	36
NB	WASHINGTON ST	0	584	205	789	0	2	0	0.0	12.0	0.0	36
SB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	40

TOTAL VOLUME = 872

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	0.0%	N	15	0	.000	200	Y	12.5	3
WB	0.0%	2.0%	N	10	0	.900	200	Y	12.5	3
NB	0.0%	2.0%	N	15	5	.900	200	Y	17.0	3
SB	0.0%	0.0%	N	0	0	.000	200	Y	17.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1								*		*	*						63.7	4	A
2							*					*					8.3	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	0	0	83	.900	0	0	92
NB	0	584	205	.900	0	649	228
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
WB	RT	92	2	1.05	97	0.00	1.00
NB	TH-RT	877	2	1.05	921	0.00	0.26

WASHINGTON ST/AVE DE LAFAYETTE
1995 NO BUILD AM PEAK EXISTING NETWORK
date: 04-07-1989 time: 08:13:41

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	RT	1800	2	1.000	0.990	1.000	1.000	1.000	0.900	0.750	1.000	2406
NB	TH-RT	1800	2	1.000	0.990	1.000	1.000	0.990	0.900	0.936	1.000	2972

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	RT	97	2406	0.04	0.10	249	0.39	*
NB	TH-RT	921	2972	0.31	0.80	2367	0.39	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.35 TOTAL V/C= 0.39

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	RT	0.39	*	0.10	80.0	25.46	249	0.00	0.85	21.64	C	1.8	6
NB	TH-RT	0.39	*	0.80	80.0	1.82	2367	0.00	0.85	1.55	A	4.0	13

DIR	STREET	DELAY	LOS
WB	AVE DE LAFAYETTE	21.64	C
NB	WASHINGTON ST	1.55	A

INTERSECTION DELAY = 3.46 INTERSECTION LOS=A

THE EXISTING TIMING IS OPTIMAL

WASHINGTON ST/AVE DE LAFAYETTE
1995 NO BUILD PM PEAK WITH EXISTING NETWORK
Date: 04-07-1989 Time: 08:15:47

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=9PM GEOMETRICS=9PM SIGNAL=9PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	22
WB	AVE DE LAFAYETTE	0	0	191	191	0	0	2	0.0	0.0	12.0	36
NB	WASHINGTON ST	0	721	136	857	0	2	0	0.0	12.0	0.0	36
SB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	40

TOTAL VOLUME = 1048

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	0.0%	N	15	0	.000	200	Y	12.5	3
WB	0.0%	2.0%	N	10	0	.900	200	Y	12.5	3
NB	0.0%	2.0%	N	15	5	.900	200	Y	17.0	3
SB	0.0%	0.0%	N	0	0	.000	200	Y	17.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1								*		*	*						56.1	4	A
2							*					*					15.9	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	0	0	191	.900	0	0	212
NB	0	721	136	.900	0	801	151
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
WB	RT	212	2	1.05	223	0.00	1.00
NB	TH-RT	952	2	1.05	1000	0.00	0.16

WASHINGTON ST/AVE DE LAFAYETTE
1995 NO BUILD PM PEAK WITH EXISTING NETWORK
date: 04-07-1989 time: 08:15:48

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	RT	1800	2	1.000	0.990	1.000	1.000	1.000	0.900	0.750	1.000	2406
NB	TH-RT	1800	2	1.000	0.990	1.000	1.000	0.990	0.900	0.961	1.000	3051

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	RT	223	2406	0.09	0.20	477	0.47	*
NB	TH-RT	1000	3051	0.33	0.70	2141	0.47	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.42 TOTAL V/C= 0.47

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	RT	0.47	*	0.20	80.0	21.53	477	0.00	0.85	18.30	C	3.8	12
NB	TH-RT	0.47	*	0.70	80.0	4.02	2141	0.00	0.85	3.42	A	6.3	20

DIR	STREET	DELAY	LOS
WB	AVE DE LAFAYETTE	18.30	C
NB	WASHINGTON ST	3.42	A

INTERSECTION DELAY = 6.13 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

HARRISON AVE/STUART ST/KNEELAND ST
1995 NO BUILD AM PEAK EXISTING NETWORK
Date: 04-07-1989 Time: 08:21:28

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=11AM GEOMETRICS=11AM SIGNAL=11AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	STUART ST	0	768	80	848	0	2	1	0.0	11.0	11.0	60
WB	KNEELAND ST	76	949	0	1025	0	3	0	0.0	11.0	0.0	60
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	26
SB	HARRISON AVE	115	125	150	390	0	1	0	0.0	12.0	0.0	26

TOTAL VOLUME = 2263

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	Y	10	10	.960	200	Y	18.0	3
WB	0.0%	2.0%	Y	10	10	.960	200	Y	18.0	3
NB	0.0%	0.0%	N	0	0	.000	0		9.5	0
SB	0.0%	2.0%	Y	5	5	.960	200	Y	9.5	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1		*	*		*	*						*				*	33.1	4	A
2				*				*					*	*	*		38.9	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	768	80	.960	0	800	83
WB	76	949	0	.960	79	989	0
NB	0	0	0	.000	0	0	0
SB	115	125	150	.960	120	130	156

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	TH	800	2	1.05	840	0.00	0.00
EB	RT	83	1	1.00	83	0.00	1.00
WB	LT-TH	1068	3	1.10	1174	0.07	0.00
SB	LT-TH-RT	406	1	1.00	406	0.29	0.38

HARRISON AVE/STUART ST/KNEELAND ST
1995 NO BUILD AM PEAK EXISTING NETWORK
date 04-07-1989 time: 08:21:29

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3101
EB	RT	1800	1	0.967	0.990	1.000	0.849	0.958	0.900	0.850	1.000	1072
WB	LT-TH	1800	3	0.967	0.990	1.000	0.950	0.986	0.900	1.000	0.818	3563
SB	LT-TH-RT	1800	1	1.000	0.990	1.000	0.875	0.979	0.900	0.811	0.832	927

SUPPLEMENTAL WORKSHEET FOR
LEFT-TURN ADJUSTMENT FACTOR FLT
INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	No	Vo	Plto	LGo
WB	80	33	3	1068	1068	79	0.07	2	800	0.00	0

CALCULATIONS

DIR	Sop	Yo	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
WB	3600	0.222	19.682	0.375	0.487	13.404	0.513	2.082	3.000	0.454	0.818

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH	840	3101	0.27	0.41	1282	0.65	
EB	RT	83	1072	0.08	0.41	443	0.19	
WB	LT-TH	1174	3563	0.33	0.41	1474	0.80	*
SB	LT-TH-RT	406	927	0.44	0.49	451	0.90	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.77 TOTAL V/C= 0.85

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH	0.65		0.41	80.0	14.34	1282	0.96	0.85	13.00	B	10.4	32
EB	RT	0.19		0.41	80.0	11.34	443	0.00	0.85	9.63	B	1.1	4
WB	LT-TH	0.80	*	0.41	80.0	15.59	1474	2.65	0.85	15.50	C	13.9	43
SB	LT-TH-RT	0.90	*	0.49	80.0	14.27	451	16.66	0.85	26.29	D	6.2	19

DIR	STREET	DELAY	LOS
EB	STUART ST	12.70	B
WB	KNEELAND ST	15.50	C
SB	HARRISON AVE	26.29	D

INTERSECTION DELAY = 16.22 INTERSECTION LOS=C

for chosen cycle length 80.0
suggested timing phase 1 is 30.9 secs green, 4.0 secs yellow + red clear
suggested timing phase 2 is 41.1 secs green, 4.0 secs yellow + red clear

HARRISON AVE/STUART ST/KNEELAND ST
1995 NO BUILD PM PEAK WITH EXISTING NETWORK
Date: 04-07-1989 Time: 08:24:16

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=11PM GEOMETRICS=11PM SIGNAL=11PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	STAURT ST	0	885	79	964	0	2	1	0.0	11.0	11.0	60
WB	KNEELAND ST	84	956	0	1040	0	3	0	0.0	11.0	0.0	60
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	26
SB	HARRISON AVE	298	234	186	718	0	1	0	0.0	12.0	0.0	26

TOTAL VOLUME = 2722

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	Y	10	10	.950	200	Y	18.0	3
WB	0.0%	2.0%	Y	10	10	.950	200	Y	18.0	3
NB	0.0%	0.0%	N	0	0	.000	0		9.5	0
SB	0.0%	2.0%	Y	5	5	.950	200	Y	9.5	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1		*	*		*	*						*				*	24.3	4	A
2				*				*					*	*	*		47.7	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	885	79	.950	0	932	83
WB	84	956	0	.950	88	1006	0
NB	0	0	0	.000	0	0	0
SB	298	234	186	.950	314	246	196

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	TH	932	2	1.05	978	0.00	0.00
EB	RT	83	1	1.00	83	0.00	1.00
WB	LT-TH	1095	3	1.10	1204	0.08	0.00
SB	LT-TH-RT	756	1	1.00	756	0.42	0.26

HARRISON AVE/STUART ST/KNEELAND ST
1995 NO BUILD PM PEAK WITH EXISTING NETWORK
date 04-07-1989 time: 08:24:17

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3101
EB	RT	1800	1	0.967	0.990	1.000	0.849	0.958	0.900	0.850	1.000	1072
WB	LT-TH	1800	3	0.967	0.990	1.000	0.950	0.986	0.900	1.000	0.745	3247
SB	LT-TH-RT	1800	1	1.000	0.990	1.000	0.875	0.979	0.900	0.840	0.804	928

SUPPLEMENTAL WORKSHEET FOR
LEFT-TURN ADJUSTMENT FACTOR FLT
INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	No	Vo	Plto	LGo
WB	80	24	3	1095	1095	88	0.08	2	932	0.00	0

CALCULATIONS

DIR	Sop	Yo	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
WB	3600	0.259	4.845	0.293	0.744	19.448	0.256	0.689	3.843	0.236	0.745

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH	978	3101	0.32	0.30	942	1.04	
EB	RT	83	1072	0.08	0.30	326	0.26	
WB	LT-TH	1204	3247	0.37	0.30	986	1.22	*
SB	LT-TH-RT	756	928	0.81	0.60	554	1.37	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 1.18 TOTAL V/C= 1.32

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH	1.04		0.30	80.0	21.53	942	31.05	0.85	44.70	E	22.2	68
EB	RT	0.26		0.30	80.0	15.98	326	0.00	0.85	13.58	B	1.3	5
WB	LT-TH	1.22	*	0.30	80.0	23.43	986	84.88	0.85	92.06	F	44.9	135
SB	LT-TH-RT	1.37	*	0.60	80.0	26.63	554	137.21	0.85	139.26	F	41.4	125

DIR	STREET	DELAY	LOS
EB	STAURT ST	42.26	E
WB	KNEELAND ST	92.06	F
SB	HARRISON AVE	139.26	F

INTERSECTION DELAY = 86.38 INTERSECTION LOS=F

for chosen cycle length 80.0
suggested timing phase 1 is 22.5 secs green, 4.0 secs yellow + red clear
suggested timing phase 2 is 49.5 secs green, 4.0 secs yellow + red clear

CHAUNCY ST/AVE DE LAFAYETTE
1995 NO BUILD AM PEAK EXISTING NETWORK
Date: 04-07-1989 Time: 08:27:50

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=15AM GEOMETRICS=15AM SIGNAL=15AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	AVE DE LAFAYETTE	0	0	0	0	0	0	0	0.0	0.0	0.0	0
WB	AVE DE LAFAYETTE	0	22	13	35	0	2	0	0.0	11.0	0.0	44
NB	CHAUNCY ST	16	416	0	432	1	1	0	11.0	10.0	0.0	40
SB	CHAUNCY ST	0	0	173	173	0	0	1	0.0	0.0	14.0	36

TOTAL VOLUME = 640

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.000	15		11.0	3
WB	0.0%	2.0%	Y	10	10	.900	180	N	11.0	3
NB	0.0%	2.0%	Y	10	20	.900	100	N	13.0	3
SB	0.0%	2.0%	N	0	25	.900	310	N	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1								*				*			*		18.4	3	A
2						*	*					*				*	2.0	3	A
3				*				*	*	*							49.5	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	0	22	13	.900	0	24	14
NB	16	416	0	.900	18	462	0
SB	0	0	173	.900	0	0	192

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
WB	TH-RT	39	2	1.05	41	0.00	0.37
NB	LT	18	1	1.00	18	1.00	0.00
NB	TH	462	1	1.00	462	0.00	0.00
SB	RT	192	1	1.00	192	0.00	1.00

CHAUNCY ST/AVE DE LAFAYETTE
1995 NO BUILD AM PEAK EXISTING NETWORK
date: 04-07-1989 time: 08:27:51

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	TH-RT	1800	2	0.967	0.990	1.000	0.925	0.979	0.900	0.889	1.000	2497
NB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1473
NB	TH	1800	1	0.933	0.990	1.000	0.849	0.917	0.900	1.000	1.000	1165
SB	RT	1800	1	1.067	0.990	1.000	1.000	0.896	0.900	0.850	1.000	1303

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	TH-RT	41	2497	0.02	0.03	64	0.64	*
NB	LT	18	1473	0.01	0.62	912	0.02	
NB	TH	462	1165	0.40	0.62	721	0.64	*
SB	RT	192	1303	0.15	0.23	300	0.64	*

CYCLE= 80.0 LOST=10.0 SUM V/S CRIT= 0.56 TOTAL V/C= 0.64

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	TH-RT	0.64	*	0.03	80.0	29.35	64	15.16	0.85	37.83	D	1.0	4
NB	LT	0.02		0.62	80.0	4.46	912	0.00	1.00	4.46	A	0.2	1
NB	TH	0.64	*	0.62	80.0	7.31	721	1.49	0.85	7.47	B	3.9	13
SB	RT	0.64	*	0.23	80.0	21.13	300	3.51	0.85	20.95	C	3.3	11

DIR	STREET	DELAY	LOS
WB	AVE DE LAFAYETTE	37.83	D
NB	CHAUNCY ST	7.36	B
SB	CHAUNCY ST	20.95	C

INTERSECTION DELAY = 12.77 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

CHAUNCY ST/AVE DE LAFAYETTE

1995 NO BUILD PM PEAK WITH EXISTING NETWORK

Date 04-07-1989 Time: 08:29:43

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=15PM GEOMETRICS=15PM SIGNAL=15PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	AVE DE LAFAYETTE	0	0	0	0	0	0	0	0.0	0.0	0.0	0
WB	AVE DE LAFAYETTE	0	63	31	94	0	2	0	0.0	11.0	0.0	44
NB	CHAUNCY ST	21	365	0	386	1	1	0	11.0	10.0	0.0	40
SB	CHAUNCY ST	0	0	221	221	0	0	1	0.0	0.0	14.0	36

TOTAL VOLUME = 701

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.000	15		11.0	3
WB	0.0%	2.0%	Y	10	10	.900	180	N	11.0	3
NB	0.0%	2.0%	Y	10	20	.900	100	N	13.0	3
SB	0.0%	2.0%	N	0	25	.900	310	N	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1								*				*			*		22.8	3	A
2						*	*					*				*	5.2	3	A
3			*					*	*	*							42.0	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	0	63	31	.900	0	70	34
NB	21	365	0	.900	23	406	0
SB	0	0	221	.900	0	0	246

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
WB	TH-RT	104	2	1.05	110	0.00	0.33
NB	LT	23	1	1.00	23	1.00	0.00
NE	TH	406	1	1.00	406	0.00	0.00
SB	RT	246	1	1.00	246	0.00	1.00

CHAUNCY ST/AVE DE LAFAYETTE
1995 NO BUILD PM PEAK WITH EXISTING NETWORK
date: 04-07-1989 time: 08:29:44

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	TH-RT	1800	2	0.967	0.990	1.000	0.925	0.979	0.900	0.902	1.000	2532
NB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1473
NB	TH	1800	1	0.933	0.990	1.000	0.849	0.917	0.900	1.000	1.000	1165
SE	RT	1800	1	1.067	0.990	1.000	1.000	0.896	0.900	0.850	1.000	1303

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	TH-RT	110	2532	0.04	0.07	165	0.66	*
NB	LT	23	1473	0.02	0.53	774	0.03	
NB	TH	406	1165	0.35	0.53	612	0.66	*
SB	RT	246	1303	0.19	0.28	371	0.66	*

CYCLE= 80.0 LOST=10.0 SUM V/S CRIT= 0.58 TOTAL V/C= 0.66

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	TH-RT	0.66	*	0.07	80.0	27.76	165	7.58	0.85	30.04	D	2.2	8
NB	LT	0.03		0.53	80.0	6.96	774	0.00	1.00	6.96	B	0.2	1
NE	TH	0.65	*	0.53	80.0	10.51	612	2.14	0.85	10.76	B	4.3	14
SB	RT	0.66	*	0.28	80.0	19.18	371	3.50	0.85	19.28	C	3.9	13

DIR	STREET	DELAY	LOS
WB	AVE DE LAFAYETTE	30.04	D
NB	CHAUNCY ST	10.55	B
SE	CHAUNCY ST	19.28	C

INTERSECTION DELAY = 16.01 INTERSECTION LOS=C

THE EXISTING TIMING IS OPTIMAL

CHAUNCY ST/AVE DE LAFAYETTE
1995 NO BUILD SAT PEAK WITH EXISTING NETWORK
Date: 04-07-1989 Time: 08:31:27

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=15SAT GEOMETRICS=15SAT SIGNAL=15SAT

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	AVE DE LAFAYETTE	0	0	0	0	0	0	0	0.0	0.0	0.0	0
WB	AVE DE LAFAYETTE	0	83	8	91	0	2	0	0.0	11.0	0.0	44
NB	CHAUNCY ST	15	326	0	341	1	1	0	11.0	10.0	0.0	40
SB	CHAUNCY ST	0	0	196	196	0	0	1	0.0	0.0	14.0	36

TOTAL VOLUME = 628

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.000	15		11.0	3
WB	0.0%	2.0%	Y	10	10	.900	180	N	11.0	3
NB	0.0%	2.0%	Y	10	20	.900	100	N	13.0	3
SB	0.0%	2.0%	N	0	25	.900	310	N	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1								*				*			*		22.6	3	A
2						*	*					*				*	5.3	3	A
3			*					*	*	*							42.1	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	0	83	8	.900	0	92	9
NB	15	326	0	.900	17	362	0
SB	0	0	196	.900	0	0	218

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
WB	TH-RT	101	2	1.05	106	0.00	0.09
NB	LT	17	1	1.00	17	1.00	0.00
NB	TH	362	1	1.00	362	0.00	0.00
SB	RT	218	1	1.00	218	0.00	1.00

CHAUNCY ST/AVE DE LAFAYETTE
1995 NO BUILD SAT PEAK WITH EXISTING NETWORK
date: 04-07-1989 time: 08:31:27

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	TH-RT	1800	2	0.967	0.990	1.000	0.925	0.979	0.900	0.974	1.000	2734
NB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1473
NB	TH	1800	1	0.933	0.990	1.000	0.849	0.917	0.900	1.000	1.000	1165
SB	RT	1800	1	1.067	0.990	1.000	1.000	0.896	0.900	0.850	1.000	1303

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	TH-RT	106	2734	0.04	0.07	180	0.59	*
NB	LT	17	1473	0.01	0.53	775	0.02	
NB	TH	362	1165	0.31	0.53	613	0.59	*
SB	RT	218	1303	0.17	0.28	369	0.59	*

CYCLE= 80.0 LOST=10.0 SUM V/S CRIT= 0.52 TOTAL V/C= 0.59

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	TH-RT	0.59	*	0.07	80.0	27.61	180	3.34	0.85	26.30	D	2.1	7
NB	LT	0.02		0.53	80.0	6.90	775	0.00	1.00	6.90	B	0.2	1
NB	TH	0.59	*	0.53	80.0	9.90	613	0.99	0.85	9.26	B	3.8	12
SB	RT	0.59	*	0.28	80.0	18.77	369	1.65	0.85	17.35	C	3.5	11

DIR	STREET	DELAY	LOS
WB	AVE DE LAFAYETTE	26.30	D
NB	CHAUNCY ST	9.16	B
SB	CHAUNCY ST	17.35	C

INTERSECTION DELAY = 14.29 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

SUMMER ST/ARCH ST/CHAUNCY ST

1995 NO BUILD AM PEAK WITH EXISTING NETWORK

Date: 04-07-1989 Time: 08:35:47

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=17AM GEOMETRICS=17AM SIGNAL=17AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	SUMMER ST	21	47	0	68	0	1	0	0.0	10.0	0.0	30
WB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
NB	CHAUNCY ST	0	324	68	392	0	1	0	0.0	10.0	0.0	30
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	0

TOTAL VOLUME = 460

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	Y	5	0	.960	300	Y	10.5	3
WB	0.0%	0.0%	N	0	0	.000	300	Y	10.5	0
NB	0.0%	2.0%	Y	5	0	.960	400	Y	10.5	3
SB	0.0%	0.0%	N	0	0	.000	400	Y	10.5	0

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1				*				*		*	*						43.9	4	A
2	*	*										*				*	8.1	4	A

CYCLE= 60.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	21	47	0	.960	22	49	0
WB	0	0	0	.000	0	0	0
NB	0	324	68	.960	0	338	71
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
EB	LT-TH	71	1	1.00	71	0.31	0.00
NB	TH-RT	408	1	1.00	408	0.00	0.17

SUMMER ST/ARCH ST/CHAUNCY ST

1995 NO BUILD AM PEAK WITH EXISTING NETWORK

date: 04-07-1989 time: 08:35:48

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH	1800	1	0.933	0.990	1.000	0.875	1.000	0.900	1.000	0.799	1047
NB	TH-RT	1800	1	0.933	0.990	1.000	0.875	1.000	0.900	0.852	1.000	1115

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH	71	1047	0.07	0.14	141	0.50	*
NB	TH-RT	408	1115	0.37	0.73	816	0.50	*

CYCLE= 60.0 LOST= 8.0 SUM V/S CRIT= 0.43 TOTAL V/C= 0.50

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH	0.50	*	0.14	60.0	18.29	141	0.02	0.85	15.57	C	1.0	4
NB	TH-RT	0.50	*	0.73	60.0	2.59	816	0.00	0.85	2.21	A	1.8	6

DIR	STREET	DELAY	LOS
EB	SUMMER ST	15.57	C
NB	CHAUNCY ST	2.21	A

INTERSECTION DELAY = 4.18 INTERSECTION LOS=A

THE EXISTING TIMING IS OPTIMAL

SUMMER ST/ARCH ST/CHAUNCY ST
1995 NO BUILD PM PEAK WITH EXISTING NETWORK
Date: 04-07-1989 Time: 08:38:15

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=17PM GEOMETRICS=17PM SIGNAL=17PM

LOCATED IN C8D:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	SUMMER ST	46	96	0	142	0	1	0	0.0	10.0	0.0	30
WB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
NB	CHAUNCY ST	0	324	107	431	0	1	0	0.0	10.0	0.0	30
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	0

TOTAL VOLUME = 573

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	Y	5	0	.860	375	Y	10.5	3
WB	0.0%	0.0%	N	0	0	.000	375	Y	10.5	0
NB	0.0%	2.0%	Y	5	0	.860	500	Y	10.5	3
SB	0.0%	0.0%	N	0	0	.000	500	Y	10.5	0

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1				*				*		*	*						38.6	4	A
2	*	*										*				*	13.4	4	A

CYCLE= 60.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	46	96	0	.860	53	112	0
WB	0	0	0	.000	0	0	0
NB	0	324	107	.860	0	377	124
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT-TH	165	1	1.00	165	0.32	0.00
NB	TH-RT	501	1	1.00	501	0.00	0.25

SUMMER ST/ARCH ST/CHAUNCY ST

1995 NO BUILD PM PEAK WITH EXISTING NETWORK

date: 04-07-1989 time: 08:38:16

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH	1800	1	0.933	0.990	1.000	0.875	1.000	0.900	1.000	0.779	1020
NB	TH-RT	1800	1	0.933	0.990	1.000	0.875	1.000	0.900	0.822	1.000	1076

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH	165	1020	0.16	0.22	228	0.72	*
NB	TH-RT	501	1076	0.47	0.64	692	0.72	*

CYCLE= 60.0 LOST= 8.0 SUM V/S CRIT= 0.63 TOTAL V/C= 0.72

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH	0.72	*	0.22	60.0	16.40	228	9.00	0.85	21.59	C	2.4	8
NB	TH-RT	0.72	*	0.64	60.0	5.44	692	3.14	0.85	7.29	B	3.0	10

DIR	STREET	DELAY	LOS
EB	SUMMER ST	21.59	C
NB	CHAUNCY ST	7.29	B

INTERSECTION DELAY = 10.84 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

SUMMER ST/ARCH ST/CHAUNCY ST

1995 NO BUILD SAT PEAK WITH EXISTING NETWORK

Date: 04-07-1989 Time: 08:39:47

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=17SAT GEOMETRICS=17SAT SIGNAL=17SAT

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	SUMMER ST	61	126	0	187	0	1	0	0.0	10.0	0.0	30
WE		0	0	0	0	0	0	0	0.0	0.0	0.0	0
NB	CHAUNCY ST	0	255	99	354	0	1	0	0.0	10.0	0.0	30
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	0

TOTAL VOLUME = 541

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	Y	5	0	.910	375	Y	10.5	3
WB	0.0%	0.0%	N	0	0	.000	375	Y	10.5	0
NB	0.0%	2.0%	Y	5	0	.910	500	Y	10.5	3
SE	0.0%	0.0%	N	0	0	.000	500	Y	10.5	0

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1				*				*		*	*						33.5	4	A
2	*	*										*				*	18.5	4	A

CYCLE= 60.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	61	126	0	.910	67	138	0
WB	0	0	0	.000	0	0	0
NB	0	255	99	.910	0	280	109
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
EB	LT-TH	205	1	1.00	205	0.33	0.00
NB	TH-RT	389	1	1.00	389	0.00	0.28

SUMMER ST/ARCH ST/CHAUNCY ST

1995 NO BUILD SAT PEAK WITH EXISTING NETWORK

date: 04-07-1989 time: 08:39:48

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH	1800	1	0.933	0.990	1.000	0.875	1.000	0.900	1.000	0.778	1019
NB	TH-RT	1800	1	0.933	0.990	1.000	0.875	1.000	0.900	0.812	1.000	1063

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH	205	1019	0.20	0.31	314	0.65	*
NB	TH-RT	389	1063	0.37	0.56	594	0.65	*

CYCLE= 60.0 LOST= 8.0 SUM V/S CRIT= 0.57 TOTAL V/C= 0.65

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH	0.65	*	0.31	60.0	13.68	314	3.83	0.85	14.88	B	2.4	8
NB	TH-RT	0.65	*	0.56	60.0	7.00	594	2.05	0.85	7.70	B	2.9	9

DIR	STREET	DELAY	LOS
EB	SUMMER ST	14.88	B
NB	CHAUNCY ST	7.70	B

INTERSECTION DELAY = 10.18 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

OTIS ST/KINGSTON ST/SUMMER ST
1995 NO BUILD AM PEAK WITH EXISTING NETWORK
Date: 04-07-1989 Time: 08:56:24

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=20AM GEOMETRICS=20AM SIGNAL=20AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	SUMMER ST	0	57	57	114	0	1	1	0.0	10.0	10.0	25
WB	SUMMER ST	96	0	0	96	1	0	0	10.0	0.0	0.0	32
NB	KINGSTON ST	0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	OTIS ST	56	177	0	233	1	1	0	10.0	10.0	0.0	25

TOTAL VOLUME = 443

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	Y	10	0	.880	400	N	11.0	3
WB	0.0%	2.0%	N	0	0	.880	400	N	11.0	3
NB	0.0%	0.0%	N	0	0	.000	0		9.3	3
SB	0.0%	2.0%	N	0	0	.880	400	N	9.3	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1		*	*		*							*				*	28.5	4	A
2				*				*					*	*			43.5	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	57	57	.880	0	65	65
WB	96	0	0	.880	109	0	0
NB	0	0	0	.000	0	0	0
SB	56	177	0	.880	64	201	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	TH	65	1	1.00	65	0.00	0.00
EB	RT	65	1	1.00	65	0.00	1.00
WB	LT	109	1	1.00	109	1.00	0.00
SB	LT	64	1	1.00	64	1.00	0.00
SB	TH	201	1	1.00	201	0.00	0.00

OTIS ST/KINGSTON ST/SUMMER ST
1995 NO BUILD AM PEAK WITH EXISTING NETWORK
date: 04-07-1989 time: 08:56:25

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH	1800	1	0.933	0.990	1.000	1.000	1.000	0.900	1.000	1.000	1497
EB	RT	1800	1	0.933	0.990	1.000	0.849	1.000	0.900	0.850	1.000	1080
WB	LT	1800	1	0.933	0.990	1.000	1.000	1.000	0.900	1.000	0.832	1246
SB	LT	1800	1	0.933	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1422
SB	TH	1800	1	0.933	0.990	1.000	1.000	1.000	0.900	1.000	1.000	1497

SUPPLEMENTAL WORKSHEET FOR
LEFT-TURN ADJUSTMENT FACTOR FLT
INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	No	Vo	Plto	LGo
WB	80	28	1	109	0	109	1.00	1	65	0.00	0

CALCULATIONS

DIR	Sop	Yo	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
WB	1800	0.036	26.532	0.835	1.000	1.924	0.000	0.000	1.348	0.832	0.832

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH	65	1497	0.04	0.36	532	0.12	
EB	RT	65	1080	0.06	0.36	384	0.17	
WB	LT	109	1246	0.09	0.36	443	0.25	*
SB	LT	64	1422	0.04	0.54	774	0.08	
SB	TH	201	1497	0.13	0.54	815	0.25	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.22 TOTAL V/C= 0.25

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH	0.12		0.36	80.0	13.19	532	0.00	0.85	11.21	B	0.9	4
EB	RT	0.17		0.36	80.0	13.42	384	0.00	0.85	11.41	B	0.9	4
WB	LT	0.25	*	0.36	80.0	13.83	443	0.00	0.85	11.76	B	1.6	6
SB	LT	0.08		0.54	80.0	6.61	774	0.00	1.00	6.61	B	0.6	3
SB	TH	0.25	*	0.54	80.0	7.29	815	0.00	0.85	6.20	B	2.0	7

DIR	STREET	DELAY	LOS
EB	SUMMER ST	11.31	B
WB	SUMMER ST	11.76	B
SB	OTIS ST	6.30	B

INTERSECTION DELAY = 8.77 INTERSECTION LOS=B

for chosen cycle length 80.0
suggested timing phase 1 is 28.4 secs green, 4.0 secs yellow + red clear
suggested timing phase 2 is 43.6 secs green, 4.0 secs yellow + red clear

OTIS ST/KINGSTON ST/SUMMER ST
1995 NO BUILD PM PEAK WITH EXISTING NETWORK
Date: 04-07-1989 Time: 09:19:28

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=20PM GEOMETRICS=20PM SIGNAL=20PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	SUMMER ST	0	113	91	204	0	1	1	0.0	10.0	10.0	25
WB	SUMMER ST	92	0	0	92	1	0	0	10.0	0.0	0.0	32
NB	KINGSTON ST	0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	OTIS ST	95	372	0	467	1	1	0	10.0	10.0	0.0	25

TOTAL VOLUME = 763

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	Y	10	0	.980	400	N	11.0	3
WB	0.0%	2.0%	N	0	0	.980	400	N	11.0	3
NB	0.0%	0.0%	N	0	0	.000	0		9.3	3
SB	0.0%	2.0%	N	0	0	.980	400	N	9.3	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1		*	*		*							*				*	18.2	4	A
2				*				*					*	*			53.8	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	113	91	.980	0	115	93
WB	92	0	0	.980	94	0	0
NB	0	0	0	.000	0	0	0
SB	95	372	0	.980	97	380	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
EB	TH	115	1	1.00	115	0.00	0.00
EB	RT	93	1	1.00	93	0.00	1.00
WB	LT	94	1	1.00	94	1.00	0.00
SB	LT	97	1	1.00	97	1.00	0.00
SB	TH	380	1	1.00	380	0.00	0.00

OTIS ST/KINGSTON ST/SUMMER ST

1995 NO BUILD PM PEAK WITH EXISTING NETWORK

date: 04-07-1989 time: 09:19:29

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH	1800	1	0.933	0.990	1.000	1.000	1.000	0.900	1.000	1.000	1497
EB	RT	1800	1	0.933	0.990	1.000	0.849	1.000	0.900	0.850	1.000	1080
WB	LT	1800	1	0.933	0.990	1.000	1.000	1.000	0.900	1.000	0.768	1149
SB	LT	1800	1	0.933	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1422
SB	TH	1800	1	0.933	0.990	1.000	1.000	1.000	0.900	1.000	1.000	1497

SUPPLEMENTAL WORKSHEET FOR

LEFT-TURN ADJUSTMENT FACTOR FLT

INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	No	Vo	Plto	LGo
WB	80	18	1	94	0	94	1.00	1	115	0.00	0

CALCULATIONS

DIR	Sop	Yo	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
WB	1800	0.064	14.000	0.803	1.000	4.228	0.000	0.000	1.401	0.768	0.768

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH	115	1497	0.08	0.23	341	0.34	
EB	RT	93	1080	0.09	0.23	246	0.38	*
WB	LT	94	1149	0.08	0.23	262	0.36	
SB	LT	97	1422	0.07	0.67	956	0.10	
SB	TH	380	1497	0.25	0.67	1006	0.38	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.34 TOTAL V/C= 0.38

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH	0.34		0.23	80.0	19.64	341	0.00	0.85	16.69	C	2.0	7
EB	RT	0.38	*	0.23	80.0	19.83	246	0.00	0.85	16.86	C	1.6	6
WB	LT	0.36		0.23	80.0	19.74	262	0.00	0.85	16.78	C	1.6	6
SB	LT	0.10		0.67	80.0	3.51	956	0.00	1.00	3.51	A	0.7	3
SB	TH	0.38	*	0.67	80.0	4.36	1006	0.00	0.85	3.72	A	2.8	9

DIR	STREET	DELAY	LOS
EB	SUMMER ST	16.76	C
WB	SUMMER ST	16.78	C
SB	OTIS ST	3.68	A

INTERSECTION DELAY = 8.76 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

ESSEX ST/SURFACE ARTERY/LINCOLN ST
1995 NO BUILD AM PEAK EXISTING NETWORK
Date: 04-07-1989 Time: 09:34:48

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=21AM GEOMETRICS=21AM SIGNAL=21AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	ESSEX ST	131	641	68*	840	0	3	0	0.0	12.0	0.0	52
WB	LINCOLN ST	72	1278	33	1383	0	3	0	0.0	12.0	0.0	30
NB	SURFACE ARTERY	90	522	19	631	0	3	0	0.0	11.0	0.0	56
SB	SURFACE ARTERY	74	809	79	962	0	3	0	0.0	12.0	0.0	66

TOTAL VOLUME = 3816

*assumed 60% RTOR
not included here

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.870	30	Y	16.0	3
WB	0.0%	2.0%	N	10	10	.870	200	Y	16.0	3
NB	0.0%	2.0%	N	0	20	.870	90	Y	15.5	3
SB	0.0%	2.0%	N	0	25	.870	380	Y	15.5	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*	*	*									*				*	20.5	4	A
2				*				*	*	*	*		*	*	*		29.4	4	A
3				*				*	*	*	*						0.0	4	A
4					*	*	*					*				*	32.1	4	A

CYCLE= 98.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	131	641	68	.870	151	737	78
WB	72	1278	33	.870	83	1469	38
NB	90	522	19	.870	103	600	22
SB	74	809	79	.870	85	930	91

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
EB	LT-TH-RT	966	3	1.10	1062	0.16	0.08
WB	LT-TH-RT	1590	3	1.10	1749	0.05	0.02
NB	LT-TH-RT	725	3	1.10	798	0.14	0.03
SB	LT-TH-RT	1106	3	1.10	1216	0.08	0.08

ESSEX ST/SURFACE ARTERY/LINCOLN ST
1995 NO BUILD AM PEAK EXISTING NETWORK
date: 04-07-1989 time: 09:34:49

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH-RT	1800	3	1.000	0.990	1.000	1.000	0.986	0.900	0.984	0.948	4430
WB	LT-TH-RT	1800	3	1.000	0.990	1.000	1.000	0.986	0.900	0.992	0.990	4660
NB	LT-TH-RT	1800	3	0.967	0.990	1.000	1.000	0.972	0.900	0.993	0.742	3332
SB	LT-TH-RT	1800	3	1.000	0.990	1.000	1.000	0.965	0.900	0.987	0.764	3503

SUPPLEMENTAL WORKSHEET FOR
LEFT-TURN ADJUSTMENT FACTOR FLT
INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	No	Vo	Plto	LGo
SB	98	29	3	1106	1106	85	0.08	3	725	0.14	0

CALCULATIONS

DIR	Sop	Yo	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
SB	3122	0.232	6.625	0.422	0.633	20.766	0.367	1.162	2.668	0.293	0.764

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH-RT	1062	4430	0.24	0.21	927	1.15	*
WB	LT-TH-RT	1749	4660	0.38	0.33	1526	1.15	*
NB	LT-TH-RT	798	3332	0.24	0.30	999	0.80	
SB	LT-TH-RT	1216	3503	0.35	0.30	1051	1.16	*

CYCLE= 98.0 LOST=16.0 SUM V/S CRIT= 0.96 TOTAL V/C= 1.15

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH-RT	1.15	*	0.21	98.0	30.63	927	61.25	0.85	78.09	F	37.6	114
WB	LT-TH-RT	1.15	*	0.33	98.0	26.95	1526	57.42	0.85	71.71	F	55.7	168
NB	LT-TH-RT	0.80		0.30	98.0	24.00	999	3.88	0.85	23.70	C	13.8	42
SB	LT-TH-RT	1.16	*	0.30	98.0	27.96	1051	63.97	0.85	78.15	F	41.7	126

DIR	STREET	DELAY	LOS
EB	ESSEX ST	78.09	F
WB	LINCOLN ST	71.71	F
NB	SURFACE ARTERY	23.70	C
SB	SURFACE ARTERY	78.15	F

INTERSECTION DELAY = 66.80 INTERSECTION LOS=F

for chosen cycle length 98.0
suggested timing phase 1 is 20.4 secs green, 4.0 secs yellow + red clear
suggested timing phase 2 is 29.6 secs green, 4.0 secs yellow + red clear
suggested timing phase 3 is 0.0 secs green, 4.0 secs yellow + red clear
suggested timing phase 4 is 32.0 secs green, 4.0 secs yellow + red clear

ESSEX ST/SURFACE ARTERY/LINCOLN ST

1995 NO BUILD PM PEAK WITH EXISTING NETWORK

Date: 04-07-1989 Time: 09:37:48

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=21PM GEOMETRICS=21PM SIGNAL=21PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	ESSEX ST	153	878	193*	1224	0	3	0	0.0	12.0	0.0	52
WB	LINCOLN ST	35	488	12	535	0	2	0	0.0	12.0	0.0	30
NB	SURFACE ARTERY	45	713	13	771	0	3	0	0.0	11.0	0.0	56
SB	SURFACE ARTERY	36	1340	21	1397	0	3	0	0.0	12.0	0.0	66

TOTAL VOLUME = 3927

*assumed 60% RTOR, not included here

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.940	15	Y	12.0	3
WB	0.0%	2.0%	Y	10	10	.940	180	Y	12.0	3
NB	0.0%	2.0%	N	0	20	.940	100	Y	15.5	3
SB	0.0%	2.0%	N	0	25	.940	310	Y	15.5	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*	*	*									*				*	31.1	4	A
2				*				*	*	*	*		*	*	*		28.9	4	A
3				*				*					*	*	*		1.9	4	A
4					*	*	*					*				*	20.2	4	A

CYCLE= 98.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	153	878	193	.940	163	934	205
WB	35	488	12	.940	37	519	13
NB	45	713	13	.940	48	759	14
SB	36	1340	21	.940	38	1426	22

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT-TH-RT	1302	3	1.10	1432	0.13	0.16
WB	LT-TH-RT	569	2	1.05	598	0.07	0.02
NB	LT-TH-RT	820	3	1.10	902	0.06	0.02
SB	LT-TH-RT	1486	3	1.10	1635	0.03	0.02

ESSEX ST/SURFACE ARTERY/LINCOLN ST
1995 NO BUILD PM PEAK WITH EXISTING NETWORK
date· 04-07-1989 time. 09:37:49

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH-RT	1800	3	1.000	0.990	1.000	1.000	0.986	0.900	0.969	0.963	4426
WB	LT-TH-RT	1800	2	1.000	0.990	1.000	0.925	0.979	0.900	0.993	0.987	2847
NB	LT-TH-RT	1800	3	0.967	0.990	1.000	1.000	0.972	0.900	0.996	0.714	3216
SB	LT-TH-RT	1800	3	1.000	0.990	1.000	1.000	0.965	0.900	0.998	0.974	4515

SUPPLEMENTAL WORKSHEET FOR
LEFT-TURN ADJUSTMENT FACTOR FLT
INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	No	Vo	Plto	LGo
NB	98	29	3	820	820	48	0.06	3	1399	0.03	0

CALCULATIONS

DIR	Sop	Yo	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
NB	5122	0.273	5.113	0.001	0.807	23.759	0.193	0.479	1800.000	0.142	0.714

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH-RT	1432	4426	0.32	0.32	1404	1.02	*
WB	LT-TH-RT	598	2847	0.21	0.21	586	1.02	*
NB	LT-TH-RT	902	3216	0.28	0.29	947	0.95	
SB	LT-TH-RT	1635	4515	0.36	0.35	1602	1.02	*

CYCLE= 98.0 LOST=12.0 SUM V/S CRIT= 0.90 TOTAL V/C= 1.02

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH-RT	1.02	*	0.32	98.0	25.68	1404	22.73	0.85	41.15	E	31.5	95
WB	LT-TH-RT	1.02	*	0.21	98.0	29.74	586	32.95	0.85	53.28	E	17.1	52
NB	LT-TH-RT	0.95		0.29	98.0	25.76	947	14.67	0.85	34.36	D	18.1	55
SB	LT-TH-RT	1.02	*	0.35	98.0	24.30	1602	21.55	0.85	38.97	D	34.0	103

DIR	STREET	DELAY	LOS
EB	ESSEX ST	41.15	E
WB	LINCOLN ST	53.28	E
NB	SURFACE ARTERY	34.36	D
SB	SURFACE ARTERY	38.97	D

INTERSECTION DELAY = 40.62 INTERSECTION LOS=E

for chosen cycle length 98.0
suggested timing phase 1 is 31.1 secs green, 4.0 secs yellow + red clear
suggested timing phase 2 is 28.9 secs green, 4.0 secs yellow + red clear
suggested timing phase 3 is 1.9 secs green, 4.0 secs yellow + red clear
suggested timing phase 4 is 20.2 secs green, 4.0 secs yellow + red clear

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:04-07-1989 TIME:10:01:57
BEACH/HARRISON 1995 NO BUILD AM PEAK EXISTING NETWORK

LAST DATASETS LOADED OR SAVED
VOLUME=12AM GEOMETRICS=12

```
KEY:   D
       |
     A- -B
       |
       C
```

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS: FROM C: STOP
FROM D: YIELD
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 4 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: NO
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH: C: WB BEACH
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH: D: EB BEACH
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: NB HARRISON	B: SB HARRISON	C: WB BEACH	D: EB BEACH
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A: NB HARRISON			B: SB HARRISON			C: WB BEACH			D: EB BEACH		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	0	0	1	0	213	122	174	104	0	0	0	1
PHF	0.88			0.88			0.88			0.88		
ADJ VOLUME	0	0	1	0	242	139	198	118	0	0	0	1
PERCENT GRADE	0.00			0.00			0.00					
PASS CAR/HR	0			0			218	130	0	0	0	1

STEP 1 RIGHT TURNS FROM	C:WB BEACH	D:EB BEACH
CONFLICTING FLOWS	1	190
CRITICAL GAPS	5.0	4.5
CAPACITY	1199	1105
CAPACITY USED	0%	0%
IMPEDANCE FACTOR	1.00	1.00
ACTUAL CAPACITY	1199	1105

1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:04-07-1989 TIME:10:01:57
BEACH/HARRISON 1995 NO BUILD AM PEAK EXISTING NETWORK

STEP 2 LEFT TURNS FROM	B:SB HARRISON	A:NB HARRISON
CONFLICTING FLOWS	1	381
CRITICAL GAPS	5.5	5.5
CAPACITY	1106	721
CAPACITY USED	0%	0%
IMPEDANCE FACTOR	1.00	1.00
ACTUAL CAPACITY	1106	721

STEP 3 THRU MOVES FROM	C:WB BEACH	D:EB BEACH
CONFLICTING FLOWS	381	313
CRITICAL GAPS	6.5	6.0
CAPACITY	576	702
CAPACITY USED	23%	0%
IMPEDANCE FACTOR	0.84	1.00
ACTUAL CAPACITY	576	702

STEP 4 LEFT TURNS FROM	C:WB BEACH	D:EB BEACH
CONFLICTING FLOWS	382	431
CRITICAL GAPS	7.0	6.5
CAPACITY	518	537
ACTUAL CAPACITY	517	450

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
ALL MOVES FROM C:	348	538	190	D	18.91	1.83
ALL MOVES FROM D:	1	1105	1103	A	3.26	0.00

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:04-07-1989 TIME:10:03:37
BEACH/HARRISON 1995 NO BUILD PM PEAK EXISTING NETWORK

LAST DATASETS LOADED OR SAVED
VOLUME=12PM GEOMETRICS=12
KEY: D

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      .
    A- -B
      :
      C
```

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS: FROM C: STOP
FROM D: YIELD
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 4 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: NO
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH: C: WB BEACH
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH: D: EB BEACH
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: NB HARRISON	B: SB HARRISON	C: WB BEACH	D: EB BEACH
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A. NB HARRISON			B: SB HARRISON			C: WB BEACH			D: EB BEACH		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	0	0	1	0	490	106	229	124	0	0	0	1
PHF	0.92			0.92			0.92			0.92		
ADJ VOLUME	0	0	1	0	533	115	249	135	0	0	0	1
PERCENT GRADE	0.00			0.00			0.00					
PASS CAR/HR	0			0			274	148	0	0	0	1

STEP 1 RIGHT TURNS FROM	C:WB BEACH	D:EB BEACH
CONFLICTING FLOWS	1	324
CRITICAL GAPS	5.0	4.5
CAPACITY	1199	975
CAPACITY USED	0%	0%
IMPEDANCE FACTOR	1.00	1.00
ACTUAL CAPACITY	1199	975

1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:04-07-1989 TIME:10:03:37
BEACH/HARRISON 1995 NO BUILD PM PEAK EXISTING NETWORK

STEP 2 LEFT TURNS FROM	B:S8 HARRISON	A:N8 HARRISON
CONFLICTING FLOWS	1	648
CRITICAL GAPS	5.5	5.5
CAPACITY	1106	521
CAPACITY USED	0%	0%
IMPEDANCE FACTOR	1.00	1.00
ACTUAL CAPACITY	1106	521

STEP 3 THRU MOVES FROM	C:W8 BEACH	D:EB BEACH
CONFLICTING FLOWS	648	591
CRITICAL GAPS	6.5	6.0
CAPACITY	392	487
CAPACITY USED	38%	0%
IMPEDANCE FACTOR	0.70	1.00
ACTUAL CAPACITY	392	487

STEP 4 LEFT TURNS FROM	C:WB BEACH	D:EB BEACH
CONFLICTING FLOWS	649	726
CRITICAL GAPS	7.0	6.5
CAPACITY	342	349
ACTUAL CAPACITY	342	244

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
ALL MOVES FROM C:	422	358	-64	F	INFINITE	INFINITE
ALL MOVES FROM D:	1	975	974	A	3.70	0.00

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:04-07-1989 TIME:10:14:13
ESSEX/HARRISON 1995 NO BUILD AM PEAK WITH EXISTING NETWORK

LAST DATASETS LOADED OR SAVED
VOLUME=13AM GEOMETRICS=13

```
KEY:   D
       |
     A- -B
       |
       C
```

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS: FROM C: YIELD
FROM D: STOP
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 2 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: YES
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH: C: NB HARRISON
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH: D: SB HARRISON
EXCLUSIVE LEFT TURN LANES: YES
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: EB ESSEX	B: WB ESSEX	C: NB HARRISON	D: SB HARRISON
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A. EB ESSEX			B: WB ESSEX			C: NB HARRISON			D: SB HARRISON		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	404	616	243	0	0	1	0	0	1	89	91	0
PHF	0.91			0.91			0.91			0.91		
ADJ VOLUME	444	677	267	0	0	1	0	0	1	98	100	0
PERCENT GRADE	0.00			0.00			0.00					
PASS CAR/HR	488			0			0	0	1	108	110	0

STEP 1 RIGHT TURNS FROM	C:NB HARRISON	D:SB HARRISON
CONFLICTING FLOWS	338	1
CRITICAL GAPS	4.5	5.0
CAPACITY	962	1199
CAPACITY USED	0%	0%
IMPEDANCE FACTOR	1.00	1.00
ACTUAL CAPACITY	962	1199

1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:04-07-1989 TIME:10:14:13
ESSEX/HARRISON 1995 NO BUILD AM PEAK WITH EXISTING NETWORK

STEP 2 LEFT TURNS FROM	B:WB ESSEX	A:EB ESSEX
CONFLICTING FLOWS	677	1
CRITICAL GAPS	5.0	5.0
CAPACITY	585	1199
CAPACITY USED	0%	41%
IMPEDANCE FACTOR	1.00	0.67
ACTUAL CAPACITY	585	1199

STEP 3 THRU MOVES FROM	C:NB HARRISON	D:SB HARRISON
CONFLICTING FLOWS	1122	1121
CRITICAL GAPS	5.5	6.0
CAPACITY	277	228
CAPACITY USED	0%	48%
IMPEDANCE FACTOR	1.00	0.59
ACTUAL CAPACITY	186	152

STEP 4 LEFT TURNS FROM	C:NB HARRISON	D:SB HARRISON
CONFLICTING FLOWS	1222	1123
CRITICAL GAPS	6.0	6.5
CAPACITY	195	188
ACTUAL CAPACITY	77	125

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM A:	488	1199	710	A	5.07	0.69
ALL MOVES FROM C	1	962	961	A	3.75	0.00
LT FROM D.	108	125	18	E	202.58	6.05
SHARED TH/RT FROM D:	110	152	42	E	84.99	2.60

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:04-07-1989 TIME:10:16:45
ESSEX/HARRISION 1995 NO BUILD PM PEAK EXISTING NETWORK

LAST DATASETS LOADED OR SAVED
VOLUME=13PM GEOMETRICS=13

```
KEY:   D
       |
     A- -B
       |
       C
```

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS: FROM C: YIELD
FROM D: STOP
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 2 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: YES
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH: C: NB HARRISON
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH: D: SB HARRISON
EXCLUSIVE LEFT TURN LANES: YES
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: EB ESSEX	B: WB ESSEX	C: NB HARRISON	D: SB HARRISON
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A: EB ESSEX			B: WB ESSEX			C: NB HARRISON			D: SB HARRISON		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	350	1048	358	0	0	1	0	0	1	164	238	0
PHF	0.91			0.91			0.91			0.91		
ADJ VOLUME	385	1152	393	0	0	1	0	0	1	180	262	0
PERCENT GRADE	0.00			0.00			0.00					
PASS CAR/HR	423			0			0	0	1	198	288	0

STEP 1 RIGHT TURNS FROM	C:NB HARRISON	D:SB HARRISON
CONFLICTING FLOWS	576	1
CRITICAL GAPS	4.5	5.0
CAPACITY	762	1199
CAPACITY USED	0%	0%
IMPEDANCE FACTOR	1.00	1.00
ACTUAL CAPACITY	762	1199

DATE:04-07-1989 TIME:10:16:45

ESSEX/HARRISION 1995 NO BUILD PM PEAK EXISTING NETWORK

STEP 2 LEFT TURNS FROM	B:WB ESSEX	A:EB ESSEX
CONFLICTING FLOWS	1152	1
CRITICAL GAPS	5.0	5.0
CAPACITY	327	1199
CAPACITY USED	0%	35%
IMPEDANCE FACTOR	1.00	0.72
ACTUAL CAPACITY	327	1199

STEP 3 THRU MOVES FROM	C:NB HARRISON	D:SB HARRISON
CONFLICTING FLOWS	1537	1537
CRITICAL GAPS	5.5	6.0
CAPACITY	149	117
CAPACITY USED	0%	246%
IMPEDANCE FACTOR	1.00	0.00
ACTUAL CAPACITY	108	84

STEP 4 LEFT TURNS FROM	C:NB HARRISON	D:SB HARRISON
CONFLICTING FLOWS	1799	1538
CRITICAL GAPS	6.0	6.5
CAPACITY	73	92
ACTUAL CAPACITY	0	66

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM A:	423	1199	776	A	4.64	0.55
ALL MOVES FROM C:	1	0	-1	F	INFINITE	INFINITE
LT FROM D:	198	66	-132	F	INFINITE	INFINITE
SHARED TH/RT FROM D:	288	84	-203	F	INFINITE	INFINITE

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:04-07-1989 TIME:10:17:55
ESSEX/HARRISON 1995 NO BUILD SAT PEAK WITH EXISTING NETWORK

LAST DATASETS LOADED OR SAVED
VOLUME=13SAT GEOMETRICS=13

```
KEY:   D
       |
     A- -B
       |
       C
```

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS: FROM C: YIELD
FROM D: STOP
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 2 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: YES
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH: C: NB HARRISON
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH: D: SB HARRISON
EXCLUSIVE LEFT TURN LANES: YES
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: EB ESSEX	B: WB ESSEX	C: NB HARRISON	D: SB HARRISON
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A: EB ESSEX			B: WB ESSEX			C: NB HARRISON			D: SB HARRISON		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	254	719	271	0	0	1	0	0	1	249	144	0
PHF	0.87			0.91			0.87			0.87		
ADJ VOLUME	292	826	311	0	0	1	0	0	1	286	166	0
PERCENT GRADE	0.00			0.00			0.00					
PASS CAR/HR	321			0			0	0	1	315	182	0

STEP 1 RIGHT TURNS FROM	C:NB HARRISON	D:SB HARRISON
CONFLICTING FLOWS	413	1
CRITICAL GAPS	4.5	5.0
CAPACITY	895	1199
CAPACITY USED	0%	0%
IMPEDANCE FACTOR	1.00	1.00
ACTUAL CAPACITY	895	1199

1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:04-07-1989 TIME:10:17:55
ESSEX/HARRISON 1995 NO BUILD SAT PEAK WITH EXISTING NETWORK

STEP 2 LEFT TURNS FROM	B:WB ESSEX	A:EB ESSEX
CONFLICTING FLOWS	826	1
CRITICAL GAPS	5.0	5.0
CAPACITY	491	1199
CAPACITY USED	0%	27%
IMPEDANCE FACTOR	1.00	0.80
ACTUAL CAPACITY	491	1199

STEP 3 THRU MOVES FROM	C:NB HARRISON	D:SB HARRISON
CONFLICTING FLOWS	1119	1119
CRITICAL GAPS	5.5	6.0
CAPACITY	278	229
CAPACITY USED	0%	80%
IMPEDANCE FACTOR	1.00	0.26
ACTUAL CAPACITY	223	183

STEP 4 LEFT TURNS FROM	C:NB HARRISON	D:SB HARRISON
CONFLICTING FLOWS	1285	1120
CRITICAL GAPS	6.0	6.5
CAPACITY	177	188
ACTUAL CAPACITY	36	151

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM A.	321	1199	878	A	4.10	0.37
ALL MOVES FROM C:	1	895	894	A	4.03	0.00
LT FROM D:	315	151	-164	F	INFINITE	INFINITE
SHARED TH/RT FROM D:	182	183	1	E	3960.54	200.30

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:04-07-1989 TIME:10:26:18
HARRISON/AVE DE LAF/GARAGE 1995 NO BUILD AM PEAK EXISTING NETWORK

LAST DATASETS LOADED OR SAVED
VOLUME=14AM GEOMETRICS=14

```
KEY:   D
       |
     A- -B
       |
       C
```

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS: FROM C: YIELD
FROM D: STOP
FROM D RT LANE: STOP
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 4 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: NO
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH: C: NB HARRISON
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH: D: GARAGE
EXCLUSIVE LEFT TURN LANES: YES
EXCLUSIVE RIGHT TURN LANES: YES
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: AVE DE LAFA	B: AVE DE LAFA	C: NB HARRISON	D: GARAGE
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A: AVE DE LAFA			B: AVE DE LAFA			C: NB HARRISON			D: GARAGE		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	152	0	49	78	81	52	0	0	1	0	6	2
PHF	0.85			0.85			0.87			0.85		
ADJ VOLUME	179	0	58	92	95	61	0	0	1	0	7	2
PERCENT GRADE	0.00			0.00			0.00					
PERCENT CYCLES	0.00			0.00			0.00			0.00		
PASSENGER CARS	0.00			0.00			0.00			%100.00		
PERCENT LT TRU	0.00			0.00			0.00			0.00		
PERCENT HV TRU	0.00			0.00			0.00			0.00		
PASS CAR/HP	197			101			0	0	1	0	7	2

STEP 1 RIGHT TURNS FROM	C:NB HARRISON	D:GARAGE
CONFLICTING FLOWS	29	78
CRITICAL GAPS	4.5	5.0
CAPACITY	1277	1111
CAPACITY USED	0%	0%
IMPEDANCE FACTOR	1.00	1.00
ACTUAL CAPACITY	1277	1111

1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:04-07-1989 TIME:10:26:18
HARRISON/AVE DE LAF/GARAGE 1995 NO BUILD AM PEAK EXISTING NETWORK

STEP 2 LEFT TURNS FROM	B:AVE DE LAFA	A:AVE DE LAFA
CONFLICTING FLOWS	58	156
CRITICAL GAPS	5.5	5.5
CAPACITY	1041	933
CAPACITY USED	10%	21%
IMPEDANCE FACTOR	0.94	0.85
ACTUAL CAPACITY	1041	933

STEP 3 THRU MOVES FROM	C:NB HARRISON	D:GARAGE
CONFLICTING FLOWS	456	454
CRITICAL GAPS	6.0	6.5
CAPACITY	583	520
CAPACITY USED	0%	1%
IMPEDANCE FACTOR	1.00	0.99
ACTUAL CAPACITY	467	416

STEP 4 LEFT TURNS FROM	C:NB HARRISON	D:GARAGE
CONFLICTING FLOWS	465	455
CRITICAL GAPS	6.5	7.0
CAPACITY	512	463
ACTUAL CAPACITY	407	371

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM A.	197	933	736	A	4.89	0.27
LT FROM B	101	1041	940	A	3.83	0.11
ALL MOVES FROM C:	1	1277	1275	A	2.82	0.00
TH FROM D:	7	416	409	A	8.80	0.02
RT FROM D:	2	1111	1109	A	3.25	0.00

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:04-07-1989 TIME:10:28:22
HARRISON/AVE DE LAF/GARAGE-1995 NO BUILD PM PEAK EXISTING NETWORK

LAST DATASETS LOADED OR SAVED
VOLUME=14PM GEOMETRICS=14

```
KEY:   D
       |
    A- -B
       |
       C
```

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS: FROM C: YIELD
FROM D: STOP
FROM D RT LANE: STOP
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 4 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: NO
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH C: NB HARRISON
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH D: GARAGE
EXCLUSIVE LEFT TURN LANES: YES
EXCLUSIVE RIGHT TURN LANES: YES
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: AVE DE LAFA	B: AVE DE LAFA	C: NB HARRISON	D: GARAGE
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A AVE DE LAFA			B: AVE DE LAFA			C: NB HARRISON			D: GARAGE		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	50	0	86	126	168	10	0	0	1	0	88	23
PHF	0.95			0.95			0.87			0.85		
ADJ VOLUME	53	0	91	133	177	11	0	0	1	0	104	27
PERCENT GRADE	0.00			0.00			0.00					
PERCENT CYCLES	0.00			0.00			0.00			0.00		
PASSENGER CARS	0.00			0.00			0.00			%100.00		
PERCENT LT TRU	0.00			0.00			0.00			0.00		
PERCENT HV TRU	0.00			0.00			0.00			0.00		
PASS CAR/HR	58			146			0	0	1	0	104	27

STEP 1 RIGHT TURNS FROM	C:NB HARRISON	D:GARAGE
CONFLICTING FLOWS	45	94
CRITICAL GAPS	4.5	5.0
CAPACITY	1258	1094
CAPACITY USED	0%	2%
IMPEDANCE FACTOR	1.00	0.99

1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:04-07-1989 TIME:10:28:22
HARRISON/AVE DE LAF/GARAGE-1995 NO BUILD PM PEAK EXISTING NETWORK

STEP 2 LEFT TURNS FROM	B:AVE DE LAFA	A:AVE DE LAFA
CONFLICTING FLOWS	91	187
CRITICAL GAPS	5.5	5.5
CAPACITY	1004	901
CAPACITY USED	15%	6%
IMPEDANCE FACTOR	0.90	0.96
ACTUAL CAPACITY	1004	901

STEP 3 THRU MOVES FROM	C:NB HARRISON	D:GARAGE
CONFLICTING FLOWS	418	458
CRITICAL GAPS	6.0	6.5
CAPACITY	613	517
CAPACITY USED	0%	20%
IMPEDANCE FACTOR	1.00	0.86
ACTUAL CAPACITY	534	451

STEP 4 LEFT TURNS FROM	C:NB HARRISON	D:GARAGE
CONFLICTING FLOWS	548	459
CRITICAL GAPS	6.5	7.0
CAPACITY	454	461
ACTUAL CAPACITY	336	402

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM A:	58	901	843	A	4.27	0.07
LT FROM B:	146	1004	858	A	4.20	0.17
ALL MOVES FROM C:	1	1258	1257	A	2.86	0.00
TH FROM D:	104	451	347	B	10.37	0.30
RT FROM D:	27	1094	1067	A	3.37	0.03

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:04-07-1989 TIME:11:34:48
HARRISON/AVE DE LAF/GARAGE 1995 NO BUILD SAT PEAK EXISTING NETWORK

LAST DATASETS LOADED OR SAVED
VOLUME=14SAT GEOMETRICS=14

```
KEY:   D
       :
     A- -B
       :
       C
```

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS: FROM C: YIELD
FROM D: STOP
FROM D RT LANE: STOP
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 4 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: NO
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH: C: NB HARRISON
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH D: GARAGE
EXCLUSIVE LEFT TURN LANES: YES
EXCLUSIVE RIGHT TURN LANES: YES
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: AVE DE LAFA	B: AVE DE LAFA	C: NB HARRISON	D: GARAGE
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A: AVE DE LAFA			B AVE DE LAFA			C: NB HARRISON			D: GARAGE		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	61	0	174	139	130	25	0	0	1	0	29	20
PHF	0.87			0.87			0.87			0.87		
ADJ VOLUME	70	0	200	160	149	29	0	0	1	0	33	23
PERCENT GRADE	0.00			0.00			0.00					
PERCENT CYCLES	0.00			0.00			0.00			0.00		
PASSENGER CARS	0.00			0.00			0.00			%100.00		
PERCENT LT TRU	0.00			0.00			0.00			0.00		
PERCENT HV TRU	0.00			0.00			0.00			0.00		
PASS CAR/HR	77			176			0	0	1	0	33	23

STEP 1 RIGHT TURNS FROM	C:NB HARRISON	D:GARAGE
CONFLICTING FLOWS	100	89
CRITICAL GAPS	4.5	5.0
CAPACITY	1199	1099
CAPACITY USED	0%	2%
IMPEDANCE FACTOR	1.00	0.99

1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:04-07-1989 TIME:11:34:48
HARRISON/AVE DE LAF/GARAGE 1995 NO BUILD SAT PEAK EXISTING NETWORK

STEP 2 LEFT TURNS FROM	B:AVE DE LAFA	A:AVE DE LAFA
CONFLICTING FLOWS	200	178
CRITICAL GAPS	5.5	5.5
CAPACITY	888	911
CAPACITY USED	20%	8%
IMPEDANCE FACTOR	0.86	0.95
ACTUAL CAPACITY	888	911

STEP 3 THRU MOVES FROM	C:NB HARRISON	D:GARAGE
CONFLICTING FLOWS	508	594
CRITICAL GAPS	6.0	6.5
CAPACITY	544	425
CAPACITY USED	0%	8%
IMPEDANCE FACTOR	1.00	0.95
ACTUAL CAPACITY	446	348

STEP 4 LEFT TURNS FROM	C:NB HARRISON	D:GARAGE
CONFLICTING FLOWS	564	595
CRITICAL GAPS	6.5	7.0
CAPACITY	444	373
ACTUAL CAPACITY	343	305

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM A:	77	911	833	A	4.32	0.09
LT FROM B:	176	888	713	A	5.05	0.25
ALL MOVES FROM C	1	1199	1197	A	3.01	0.00
TH FROM D:	33	348	315	B	11.44	0.11
RT FROM D:	23	1099	1076	A	3.34	0.02

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:04-07-1989 TIME:11:36:32
BEDFORD/CHAUNCY/GARAGE 1995 NO BUILD AM PEAK EXISTING NETWORK

LAST DATASETS LOADED OR SAVED
VOLUME=16AM GEOMETRICS=16

```
KEY.   D
       |
    A- -B
       |
       C
```

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS: FROM C: STOP
FROM D: STOP
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 2 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: YES
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH. C: BEDFORD ST
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES. NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH D: GARAGE
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: NB CHAUNCY	B: SB CHAUNCY	C: BEDFORD ST	D: GARAGE
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A. NB CHAUNCY			B: SB CHAUNCY			C: BEDFORD ST			D: GARAGE		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	18	280	132	0	1	0	173	128	98	16	18	0
PHF	0.92			0.92			0.92			0.92		
ADJ VOLUME	20	304	143	0	1	0	188	139	107	17	20	0
PERCENT GRADE	0.00			0.00			0.00					
PERCENT CYCLES	0.00			0.00			0.00			0.00		
PASSENGER CARS	0.00			0.00			0.00			%100.00		
PERCENT LT TRU	0.00			0.00			0.00			0.00		
PERCENT HV TRU	0.00			0.00			0.00			0.00		
PASS CAR/HR	22			0			207	153	117	17	20	0

STEP 1 RIGHT TURNS FROM	C:BEDFORD ST	D:GARAGE
CONFLICTING FLOWS	304	1
CRITICAL GAPS	5.0	5.0
CAPACITY	882	1199
CAPACITY USED	13%	0%
IMPEDANCE FACTOR	0.91	1.00
ACTUAL CAPACITY	882	1199

1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:04-07-1989 TIME:11:36:32
BEDFORD/CHAUNCY/GARAGE 1995 NO BUILD AM PEAK EXISTING NETWORK

STEP 2 LEFT TURNS FROM	B:SB CHAUNCY	A:NB CHAUNCY
CONFLICTING FLOWS	304	1
CRITICAL GAPS	5.0	5.0
CAPACITY	882	1199
CAPACITY USED	0%	2%
IMPEDANCE FACTOR	1.00	0.99
ACTUAL CAPACITY	882	1199

STEP 3 THRU MOVES FROM	C:BEDFORD ST	D:GARAGE
CONFLICTING FLOWS	325	325
CRITICAL GAPS	6.0	6.0
CAPACITY	691	691
CAPACITY USED	22%	3%
IMPEDANCE FACTOR	0.84	0.99
ACTUAL CAPACITY	685	685

STEP 4 LEFT TURNS FROM	C:BEDFORD ST	D:GARAGE
CONFLICTING FLOWS	345	571
CRITICAL GAPS	6.5	6.5
CAPACITY	606	440
ACTUAL CAPACITY	593	335

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM A:	22	1199	1177	A	3.06	0.02
ALL MOVES FROM C:	477	677	200	D	18.02	2.39
ALL MOVES FROM D:	37	460	423	A	8.52	0.09

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:04-07-1989 TIME:11:48:49
BEDFORD/CHAUNCY/GARAGE 1995 NO BUILD EXISTING NETWORK

PM PEAK

LAST DATASETS LOADED OR SAVED
VOLUME=16PM GEOMETRICS=16

```
KEY:   D
       :
     A- -B
       :
       C
```

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS: FROM C: STOP
FROM D: STOP
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 2 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: YES
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH: C: BEDFORD ST
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH: D: GARAGE
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: NB CHAUNCY	B: SB CHAUNCY	C: BEDFORD ST	D: GARAGE
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A: NB CHAUNCY			B: SB CHAUNCY			C: BEDFORD ST			D: GARAGE		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	15	319	61	0	1	0	176	82	52	52	112	44
PHF	0.92			0.92			0.92			0.92		
ADJ VOLUME	16	347	66	0	1	0	191	89	57	57	122	48
PERCENT GRADE	0.00			0.00			0.00					
PERCENT CYCLES	0.00			0.00			0.00			0.00		
PASSENGER CARS	0.00			0.00			0.00			%100.00		
PERCENT LT TRU	0.00			0.00			0.00			0.00		
PERCENT HV TRU	0.00			0.00			0.00			0.00		
PASS CAR/HR	18			0			210	98	62	57	122	48

STEP 1 RIGHT TURNS FROM	C:BEDFORD ST	D:GARAGE
CONFLICTING FLOWS	347	1
CRITICAL GAPS	5.0	5.0
CAPACITY	843	1199
CAPACITY USED	7%	4%
IMPEDANCE FACTOR	0.96	0.98
ACTUAL CAPACITY	843	1199

1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:04-07-1989 TIME:11:48:49
BEDFORD/CHAUNCY/GARAGE 1995 NO BUILD EXISTING NETWORK
PM PEAK

STEP 2 LEFT TURNS FROM	B:SB CHAUNCY	A:NB CHAUNCY
CONFLICTING FLOWS	347	1
CRITICAL GAPS	5.0	5.0
CAPACITY	843	1199
CAPACITY USED	0%	1%
IMPEDANCE FACTOR	1.00	0.99
ACTUAL CAPACITY	843	1199

STEP 3 THRU MOVES FROM	C:BEDFORD ST	D:GARAGE
CONFLICTING FLOWS	364	364
CRITICAL GAPS	6.0	6.0
CAPACITY	657	657
CAPACITY USED	15%	19%
IMPEDANCE FACTOR	0.90	0.87
ACTUAL CAPACITY	653	653

STEP 4 LEFT TURNS FROM	C:BEDFORD ST	D:GARAGE
CONFLICTING FLOWS	534	510
CRITICAL GAPS	6.5	6.5
CAPACITY	464	480
ACTUAL CAPACITY	394	412

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM A:	18	1199	1181	A	3.05	0.02
ALL MOVES FROM C:	371	489	118	D	30.47	3.14
ALL MOVES FROM D:	226	622	396	B	9.10	0.57

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:04-07-1989 TIME:12:05:53
BEDFORD/CHAUNCY/GARAGE 1995 NO BUILD SAT PEAK EXISTING NETWORK

LAST DATASETS LOADED OR SAVED
VOLUME=16SAT GEOMETRICS=16

```
KEY.   D
       |
     A- -B
       |
       C
```

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS. FROM C: STOP
FROM D: STOP
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 2 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: YES
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH. C: BEDFORD ST
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH D: GARAGE
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: NB CHAUNCY	B: SB CHAUNCY	C: BEDFORD ST	D: GARAGE
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A: NB CHAUNCY			B: SB CHAUNCY			C: BEDFORD ST			D: GARAGE		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	10	224	101	0	1	0	193	31	120	12	31	3
PHF	0.90			0.90			0.90			0.90		
ADJ VOLUME	11	249	112	0	1	0	214	34	133	13	34	3
PERCENT GRADE	0.00			0.00			0.00					
PERCENT CYCLES	0.00			0.00			0.00			0.00		
PASSENGER CARS	0.00			0.00			0.00			%100.00		
PERCENT LT TRU	0.00			0.00			0.00			0.00		
PERCENT HV TRU	0.00			0.00			0.00			0.00		
PASS CAR/HR	12			0			236	38	147	13	34	3

STEP 1 RIGHT TURNS FROM	C:BEDFORD ST	D:GARAGE
CONFLICTING FLOWS	249	1
CRITICAL GAPS	5.0	5.0
CAPACITY	935	1199
CAPACITY USED	16%	0%
IMPEDANCE FACTOR	0.90	1.00
ACTUAL CAPACITY	935	1199

1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:04-07-1989 TIME:12:05:53
BEDFORD/CHAUNCY/GARAGE 1995 NO BUILD SAT PEAK EXISTING NETWORK

STEP 2 LEFT TURNS FROM	B:SB CHAUNCY	A:NB CHAUNCY
CONFLICTING FLOWS	249	1
CRITICAL GAPS	5.0	5.0
CAPACITY	935	1199
CAPACITY USED	0%	1%
IMPEDANCE FACTOR	1.00	1.00
ACTUAL CAPACITY	935	1199

STEP 3 THRU MOVES FROM	C:BEDFORD ST	D:GARAGE
CONFLICTING FLOWS	261	261
CRITICAL GAPS	6.0	6.0
CAPACITY	749	749
CAPACITY USED	5%	5%
IMPEDANCE FACTOR	0.97	0.98
ACTUAL CAPACITY	746	746

STEP 4 LEFT TURNS FROM	C:BEDFORD ST	D:GARAGE
CONFLICTING FLOWS	299	429
CRITICAL GAPS	6.5	6.5
CAPACITY	645	539
ACTUAL CAPACITY	627	467

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM A:	12	1199	1186	A	3.03	0.01
ALL MOVES FROM C:	420	720	300	C	12.02	1.40
ALL MOVES FROM D:	51	659	608	A	5.92	0.08

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:04-07-1989 TIME:12:19:05
KINGSTON/ESSEX/AVE DE LAF-1995 NO BUILD AM PEAK EXISTING NETWORK

LAST DATASETS LOADED OR SAVED
VOLUME=18AM GEOMETRICS=18

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KEY:   D
       |
     A- -B
       |
       C
```

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS: FROM C: STOP
FROM D: STOP
PREVAILING SPEED: 30 MPH
MAIN STPEET # OF LANES: 2 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: NO
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH: C: NB KINGSTON
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH: D: SB KINGSTON
EXCLUSIVE LEFT TURN LANES: YES
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: EB ESSEX	B: WB ESSEX ST	C: NB KINGSTON	D: SB KINGSTON
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A: EB ESSEX			B: WB ESSEX ST			C: NB KINGSTON			D: SB KINGSTON		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	0	646	36	0	0	1	0	0	1	272	104	35
PHF	0.94			0.94			0.94			0.94		
ADJ VOLUME	0	687	38	0	0	1	0	0	1	289	111	37
PERCENT GRADE	0.00			0.00			0.00					
PASS CAR/HR	0			0			0	0	1	318	122	41

STEP 1 RIGHT TURNS FROM	C:NB KINGSTON	D:SB KINGSTON
CONFLICTING FLOWS	706	1
CRITICAL GAPS	5.0	5.0
CAPACITY	566	1199
CAPACITY USED	0%	3%
IMPEDANCE FACTOR	1.00	0.98
ACTUAL CAPACITY	566	1199

1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:04-07-1989 TIME:12:19:05
KINGSTON/ESSEX/AVE DE LAF-1995 NO BUILD AM PEAK EXISTING NETWORK

STEP 2 LEFT TURNS FROM	B:WB ESSEX ST	A:EB ESSEX
CONFLICTING FLOWS	726	1
CRITICAL GAPS	5.0	5.0
CAPACITY	553	1199
CAPACITY USED	0%	0%
IMPEDANCE FACTOR	1.00	1.00
ACTUAL CAPACITY	553	1199

STEP 3 THRU MOVES FROM	C:NB KINGSTON	D:SB KINGSTON
CONFLICTING FLOWS	707	726
CRITICAL GAPS	6.0	6.0
CAPACITY	416	405
CAPACITY USED	0%	30%
IMPEDANCE FACTOR	1.00	0.77
ACTUAL CAPACITY	416	405

STEP 4 LEFT TURNS FROM	C:NB KINGSTON	D:SB KINGSTON
CONFLICTING FLOWS	855	727
CRITICAL GAPS	6.5	6.5
CAPACITY	287	349
ACTUAL CAPACITY	217	349

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
ALL MOVES FROM C:	1	566	564	A	6.38	0.00
LT FROM D	318	349	30	E	118.57	10.48
SHARED TH/RT FROM D:	163	486	323	B	11.13	0.50

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:04-07-1989 TIME:12:20:44
KINGSTON/ESSEX/AVE DE LAF 1995 NO BUILD PM PEAK EXISTING NETWORK

LAST DATASETS LOADED OR SAVED
VOLUME=18PM GEOMETRICS=18

```
KEY:   D
       |
     A- -B
       |
       C
```

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS: FROM C: STOP
FROM D: STOP
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 2 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: NO
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH: C: NB KINGSTON
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH: D: SB KINGSTON
EXCLUSIVE LEFT TURN LANES: YES
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: EB ESSEX	B: WB ESSEX ST	C: NB KINGSTON	D: SB KINGSTON
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A: EB ESSEX			B: WB ESSEX ST			C: NB KINGSTON			D: SB KINGSTON		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	0	1046	129	0	0	1	0	0	1	470	345	94
PHF	0.94			0.94			0.94			0.94		
ADJ VOLUME	0	1113	137	0	0	1	0	0	1	500	367	100
PERCENT GRADE	0.00			0.00			0.00					
PASS CAR/HR	0			0			0	0	1	550	404	110

STEP 1 RIGHT TURNS FROM	C:NB KINGSTON	D:SB KINGSTON
CONFLICTING FLOWS	1181	1
CRITICAL GAPS	5.0	5.0
CAPACITY	315	1199
CAPACITY USED	0%	9%
IMPEDANCE FACTOR	1.00	0.95
ACTUAL CAPACITY	315	1199

1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)

DATE:04-07-1989 TIME:12:20:44

KINGSTON/ESSEX/AVE DE LAF 1995 NO BUILD PM PEAK EXISTING NETWORK

STEP 2 LEFT TURNS FROM	B:WB ESSEX ST	A:EB ESSEX
CONFLICTING FLOWS	1250	1
CRITICAL GAPS	5.0	5.0
CAPACITY	287	1199
CAPACITY USED	0%	0%
IMPEDANCE FACTOR	1.00	1.00
ACTUAL CAPACITY	287	1199

STEP 3 THRU MOVES FROM	C:NB KINGSTON	D:SB KINGSTON
CONFLICTING FLOWS	1182	1251
CRITICAL GAPS	6.0	6.0
CAPACITY	207	187
CAPACITY USED	0%	216%
IMPEDANCE FACTOR	1.00	0.00
ACTUAL CAPACITY	207	187

STEP 4 LEFT TURNS FROM	C:NB KINGSTON	D:SB KINGSTON
CONFLICTING FLOWS	1649	1252
CRITICAL GAPS	6.5	6.5
CAPACITY	74	151
ACTUAL CAPACITY	0	151

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
ALL MOVES FROM C:	1	0	-1	F	INFINITE	INFINITE
LT FROM D:	550	151	-399	F	INFINITE	INFINITE
SHARED TH/RT FROM D:	514	228	-286	F	INFINITE	INFINITE

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:04-07-1989 TIME:12:29:29
KINGSTON/BEDFORD 1995 NO BUILD AM PEAK EXISTING NETWORK

LAST DATASETS LOADED OR SAVED
VOLUME=19AM GEOMETRICS=19

```
KEY:   D
       |
     A- -B
       |
       C
```

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS: FROM C: YIELD
FROM D: STOP
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 2 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: NO
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH: C: NB KINGSTON
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH: D: SB KINGSTON
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: EB BEDFORD	B: WB BEDFORD	C: NB KINGSTON	D: SB KINGSTON
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A: EB BEDFORD			B: WB BEDFORD			C: NB KINGSTON			D: SB KINGSTON		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	0	0	150	123	292	0	0	1	0	0	219	107
PHF	0.88			0.88			0.88			0.88		
ADJ VOLUME	0	0	170	140	332	0	0	1	0	0	249	122
PERCENT GRADE	0.00			0.00			0.00					
PASS CAR/HR	0			154			0	1	0	0	274	134

STEP 1 RIGHT TURNS FROM	C:NB KINGSTON	D:SB KINGSTON
CONFLICTING FLOWS	85	332
CRITICAL GAPS	4.5	5.0
CAPACITY	1215	857
CAPACITY USED	0%	16%
IMPEDANCE FACTOR	1.00	0.90
ACTUAL CAPACITY	1215	857

DATE:04-07-1989 TIME:12:29:29
KINGSTON/BEDFORD 1995 NO BUILD AM PEAK EXISTING NETWORK

STEP 2 LEFT TURNS FROM	B:WB BEDFORD	A:EB BEDFORD
CONFLICTING FLOWS	170	332
CRITICAL GAPS	5.0	5.0
CAPACITY	1013	857
CAPACITY USED	15%	0%
IMPEDANCE FACTOR	0.90	1.00
ACTUAL CAPACITY	1013	857

STEP 3 THRU MOVES FROM	C:NB KINGSTON	D:SB KINGSTON
CONFLICTING FLOWS	557	642
CRITICAL GAPS	5.5	6.0
CAPACITY	583	455
CAPACITY USED	0%	60%
IMPEDANCE FACTOR	1.00	0.47
ACTUAL CAPACITY	524	409

STEP 4 LEFT TURNS FROM	C:NB KINGSTON	D:SB KINGSTON
CONFLICTING FLOWS	927	643
CRITICAL GAPS	6.0	6.5
CAPACITY	304	395
ACTUAL CAPACITY	115	355

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM B	154	1013	859	A	4.19	0.18
ALL MOVES FROM C:	1	524	523	A	6.88	0.00
ALL MOVES FROM D:	408	494	86	E	41.82	4.73

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:04-07-1989 TIME:12:30:50
KINGSTON/BEDFORD 1995 NO BUILD PM PEAK EXISTING NETWORK

LAST DATASETS LOADED OR SAVED
VOLUME=19PM GEOMETRICS=19

```
KEY    D
       |
     A- -B
       |
       C
```

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS: FROM C: YIELD
FROM D: STOP
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 2 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: NO
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH C: NB KINGSTON
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH: D: SB KINGSTON
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: EB BEDFORD	B: WB BEDFORD	C: NB KINGSTON	D: SB KINGSTON
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A EB BEDFORD			B: WB BEDFORD			C: NB KINGSTON			D: SB KINGSTON		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	0	0	174	130	155	0	0	1	0	0	382	166
PHF	0.94			0.94			0.94			0.94		
ADJ VOLUME	0	0	185	138	165	0	0	1	0	0	406	177
PERCENT GRADE	0.00			0.00			0.00					
PASS CAR/HR	0			152			0	1	0	0	447	194

STEP 1 RIGHT TURNS FROM	C:NB KINGSTON	D:SB KINGSTON
CONFLICTING FLOWS	93	165
CRITICAL GAPS	4.5	5.0
CAPACITY	1207	1019
CAPACITY USED	0%	19%
IMPEDANCE FACTOR	1.00	0.87
ACTUAL CAPACITY	1207	1019

1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:04-07-1989 TIME:12:30:50
KINGSTON/BEDFORD 1995 NO BUILD PM PEAK EXISTING NETWORK

STEP 2 LEFT TURNS FROM	B:WB BEDFORD	A:EB BEDFORD
CONFLICTING FLOWS	185	165
CRITICAL GAPS	5.0	5.0
CAPACITY	998	1019
CAPACITY USED	15%	0%
IMPEDANCE FACTOR	0.90	1.00
ACTUAL CAPACITY	998	1019

STEP 3 THRU MOVES FROM	C:NB KINGSTON	D:SB KINGSTON
CONFLICTING FLOWS	396	488
CRITICAL GAPS	5.5	6.0
CAPACITY	708	559
CAPACITY USED	0%	80%
IMPEDANCE FACTOR	1.00	0.25
ACTUAL CAPACITY	637	502

STEP 4 LEFT TURNS FROM	C:NB KINGSTON	D:SB KINGSTON
CONFLICTING FLOWS	979	489
CRITICAL GAPS	6.0	6.5
CAPACITY	282	494
ACTUAL CAPACITY	56	444

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM B:	152	998	846	A	4.26	0.18
ALL MOVES FROM C:	1	637	635	A	5.67	0.00
ALL MOVES FROM D:	641	593	-48	F	INFINITE	INFINITE

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:04-07-1989 TIME:12:33:45
KINGSTON/BEDFORD 1995 NO BUILD SAT PEAK EXISTING NETWORK

LAST DATASETS LOADED OR SAVED
VOLUME=19SAT GEOMETRICS=19

```
KEY:   D
       |
     A- -B
       |
       C
```

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS: FROM C: YIELD
FROM D: STOP
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 2 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: NO
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH: C: NB KINGSTON
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH D: SB KINGSTON
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: EB BEDFORD	B: WB BEDFORD	C: NB KINGSTON	D: SB KINGSTON
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A: EB BEDFORD			B: WB BEDFORD			C: NB KINGSTON			D: SB KINGSTON		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	0	0	132	92	145	0	0	1	0	0	248	197
PHF	0.92			0.92			0.92			0.92		
ADJ VOLUME	0	0	143	100	158	0	0	1	0	0	270	214
PERCENT GRADE	0.00			0.00			0.00					
PASS CAR/HR	0			110			0	1	0	0	297	236

STEP 1 RIGHT TURNS FROM	C:NB KINGSTON	D:SB KINGSTON
CONFLICTING FLOWS	72	158
CRITICAL GAPS	4.5	5.0
CAPACITY	1229	1026
CAPACITY USED	0%	23%
IMPEDANCE FACTOR	1.00	0.83
ACTUAL CAPACITY	1229	1026

1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)

DATE:04-07-1989 TIME:12:33:45

KINGSTON/BEDFORD 1995 NO BUILD SAT PEAK EXISTING NETWORK

STEP 2 LEFT TURNS FROM	B:WB BEDFORD	A:EB BEDFORD
CONFLICTING FLOWS	143	158
CRITICAL GAPS	5.0	5.0
CAPACITY	1041	1026
CAPACITY USED	11%	0%
IMPEDANCE FACTOR	0.93	1.00
ACTUAL CAPACITY	1041	1026

STEP 3 THRU MOVES FROM	C:NB KINGSTON	D:SB KINGSTON
CONFLICTING FLOWS	329	401
CRITICAL GAPS	5.5	6.0
CAPACITY	766	626
CAPACITY USED	0%	47%
IMPEDANCE FACTOR	1.00	0.60
ACTUAL CAPACITY	716	586

STEP 4 LEFT TURNS FROM	C:NB KINGSTON	D:SB KINGSTON
CONFLICTING FLOWS	813	402
CRITICAL GAPS	6.0	6.5
CAPACITY	358	559
ACTUAL CAPACITY	169	523

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM B:	110	1041	931	A	3.87	0.12
ALL MOVES FROM C:	1	716	715	A	5.04	0.00
ALL MOVES FROM D:	532	723	191	D	18.86	2.79

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10 : UNSIGNALIZED - 3 APPROACHES (PAGE 1 of 2)
DATE:04-07-1989 TIME:12:48:45
HARRISON/HAYWARD 1995 NO BUILD AM PEAK EXISTING NETWORK

LAST DATASETS LOADED OR SAVED
VOLUME=22AM GEOMETRICS=22
KEY: A- -B
|
C
GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS: FROM C: STOP
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 2 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: N

MINOR STREET LANES
APPROACH. C: HAYWARD PL
SHARED LEFT AND RIGHT TURN LANE: YES
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: HARRISON AV	B: PROXY	C: HAYWARD PL
LEFTS	0.00	0.00	0.00
THRUS	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00

APPROACH	A: HARRISON AV			B: PROXY			C: HAYWARD PL		
	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	0	134	0	0	1	0	0	0	46
PHF	0.90			0.87			0.90		
ADJ VOLUME	0	149	0	0	1	0	0	0	51
PERCENT GRADE	0.00			0.00			0.00		
PASS CAR/HR	0			0			0	0	56

STEP 1 RIGHT TURNS FROM C:HAYWARD PL

CONFLICTING FLOWS	149
CRITICAL GAPS	5.0
CAPACITY	1035
ACTUAL CAPACITY	1035

STEP 2 LEFT TURNS FROM B:PROXY

CONFLICTING FLOWS	149
CRITICAL GAPS	4.5
CAPACITY	1147
CAPACITY USED	0%
IMPEDANCE FACTOR	1.00
ACTUAL CAPACITY	1147

DATE:04-07-1989 TIME:12:48:45
HARRISON/HAYWARD 1995 NO BUILD AM PEAK EXISTING NETWORK

STEP 3 LEFT TURNS FROM	C:HAYWARD PL
CONFLICTING FLOWS	150
CRITICAL GAPS	6.0
CAPACITY	859
ACTUAL CAPACITY	859

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
ALL MOVES FROM C:	56	1035	979	A	3.68	0.06

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10 : UNSIGNALIZED - 3 APPROACHES (PAGE 1 of 2)
DATE:04-07-1989 TIME:12:50:09
HARRISON AVE EXT/HAYWARD PLACE 1995 NO BUILD PM PEAK EXISTING NETWORK

LAST DATASETS LOADED OR SAVED
VOLUME=22PM GEOMETRICS=22
KEY: A- -B
:
C
GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS: FROM C: STOP
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 2 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: N

MINOR STREET LANES
APPROACH: C: HAYWARD PL
SHARED LEFT AND RIGHT TURN LANE: YES
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: HARRISON AV	B: PROXY	C: HAYWARD PL
LEFTS	0.00	0.00	0.00
THRUS	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00

APPROACH	A: HARRISON AV			B: PROXY			C: HAYWARD PL		
	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	0	299	0	0	1	0	0	0	105
PHF	0.90			0.87			0.90		
ADJ VOLUME	0	332	0	0	1	0	0	0	117
PERCENT GRADE	0.00			0.00			0.00		
PASS CAR/HR	0			0			0	0	128

STEP 1 RIGHT TURNS FROM C:HAYWARD PL

CONFLICTING FLOWS	332
CRITICAL GAPS	5.0
CAPACITY	856
ACTUAL CAPACITY	856

STEP 2 LEFT TURNS FROM B:PROXY

CONFLICTING FLOWS	332
CRITICAL GAPS	4.5
CAPACITY	968
CAPACITY USED	0%
IMPEDANCE FACTOR	1.00
ACTUAL CAPACITY	968

DATE:04-07-1989 TIME:12:50:09
HARRISON AVE EXT/HAYWARD PLACE 1995 NO BUILD PM PEAK EXISTING NETWORK

STEP 3 LEFT TURNS FROM	C:HAYWARD PL
CONFLICTING FLOWS	333
CRITICAL GAPS	6.0
CAPACITY	683
ACTUAL CAPACITY	683

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
ALL MOVES FROM C:	128	856	728	A	4.94	0.18

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10 : UNSIGNALIZED - 3 APPROACHES (PAGE 1 of 2)
DATE:04-07-1989 TIME:12:52:40
HARRISON/HAYWARD 1995 NO BUILD SAT PEAK EXISTING NETWORK

LAST DATASETS LOADED OR SAVED
VOLUME=22SAT GEOMETRICS=22
KEY: A- -E
:
C
GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS. FROM C: STOP
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 2 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: N

MINOR STREET LANES
APPROACH. C: HAYWARD PL
SHARED LEFT AND RIGHT TURN LANE: YES
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: HARRISON AV	B: PROXY	C: HAYWARD PL
LEFTS	0.00	0.00	0.00
THRUS	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00

APPROACH	A: HARRISON AV			B: PROXY			C: HAYWARD PL		
	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	0	342	0	0	1	0	0	0	50
PHF	0.90			0.87			0.90		
ADJ VOLUME	0	380	0	0	1	0	0	0	56
PERCENT GRADE	0.00			0.00			0.00		
PASS CAR/HR	0			0			0	0	61

STEP 1 RIGHT TURNS FROM C:HAYWARD PL

CONFLICTING FLOWS	380
CRITICAL GAPS	5.0
CAPACITY	814
ACTUAL CAPACITY	814

STEP 2 LEFT TURNS FROM B:PROXY

CONFLICTING FLOWS	380
CRITICAL GAPS	4.5
CAPACITY	924
CAPACITY USED	0%
IMPEDANCE FACTOR	1.00
ACTUAL CAPACITY	924

DATE:04-07-1989 TIME:12:52:40
HARRISON/HAYWARD 1995 NO BUILD SAT PEAK EXISTING NETWORK

STEP 3 LEFT TURNS FROM	C:HAYWARD PL
CONFLICTING FLOWS	381
CRITICAL GAPS	6.0
CAPACITY	643
ACTUAL CAPACITY	643

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
ALL MOVES FROM C:	61	814	753	A	4.78	0.08

1995 Build LOS Analysis

Existing Roadway Network

TREMONT ST/TEMPLE PL

1995 BUILD AM PEAK WITH EXISTING NETWORK

Date: 04-11-1989 Time: 07.54.37

1985 HCM - CHAPTER 9. SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=1AM GEOMETRICS=1AM SIGNAL=1AM

LOCATED IN CBD Y

VOLUME & GEOMETRICS

DIR	STREET	VOLUMES LT	TH	RT	TOTAL	# OF LANES LT	TH	RT	LANE WIDTH LT	TH	RT	CROSS WALK
EB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
WB	TEMPLE PL	20	0	0	20	1	0	0	9.0	0.0	0.0	24
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	TREMONT ST	0	1269	0	1269	0	3	0	0.0	10.0	0.0	40

TOTAL VOLUME = 1289

TRAFFIC & ROADWAY CONDITIONS

DIR	GRADE	%HV	ADJ PARK Y/N	MOVES	BUSES	PHF	PEDESTRIANS CROSS	BUT	MIN TIME	ARR TYPE
EB	1.0%	0.0%	N	0	0	.000	0		9.0	0
WB	1.0%	2.0%	Y	10	0	.960	200	Y	9.0	3
NB	0.0%	0.0%	N	0	0	.000	0		13.0	0
SB	-1.0%	2.0%	N	0	20	.960	300	Y	13.0	3

PHASINGS

	EASTBOUND l	t	r	p	WESTBOUND l	t	r	p	NORTHBOUND l	t	r	p	SOUTHBOUND l	t	r	p	GREEN	Y+R	PRE/ACT
1					*											*	2.5	4	A
2				*				*				*				*	0.0	24	A
3								*						*			45.5	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	20	0	0	.960	21	0	0
NB	0	0	0	.000	0	0	0
SB	0	1269	0	.960	0	1322	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	V	P1t	Prt
WB	LT	21	1	1.00	21	1.00	0.00
SB	TH	1322	3	1.10	1454	0.00	0.00

TREMONT ST/TEMPLE PL

1995 BUILD AM PEAK WITH EXISTING NETWORK

date 04-11-1989 time 07.54.38

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WE	LT	1800	1	0.900	0.990	0.995	0.849	1.000	0.900	1.000	0.950	1158
SE	TH	1800	3	0.933	0.990	1.005	1.000	0.972	0.900	1.000	1.000	4388

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WE	LT	21	1158	0.02	0.03	36	0.58	*
SE	TH	1454	4388	0.33	0.57	2497	0.58	*

CYCLE= 80.0 LOST=32.0 SUM V/S CRIT= 0.35 TOTAL V/C= 0.58

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CN	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WE	LT	0.58	*	0.03	80.0	29.07	36	13.89	1.00	42.97	E	0.5	2
SE	TH	0.58	*	0.57	80.0	8.44	2497	0.22	0.85	7.36	B	12.7	39

DIR	STREET	DELAY	LOS
WE	TEMPLE PL	42.97	E
SE	TREMONT ST	7.36	B

INTERSECTION DELAY = 7.86 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

TREMONT ST/TEMPLE PL

1995 BUILD PM PEAK WITH EXISTING NETWORK

Date 04-11-1989 Time: 07:59:08

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=1PM GEOMETRICS=1PM SIGNAL=1PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
WB	TEMPLE PL	20	0	0	20	1	0	0	9.0	0.0	0.0	24
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	TREMONT ST	0	1714	0	1714	0	3	0	0.0	10.0	0.0	40

TOTAL VOLUME = 1734

TRAFFIC & ROADWAY CONDITIONS

			ADJ	PARK			PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	0.0%	N	0	0	.000	0		9.0	0
WB	1.0%	2.0%	Y	10	0	.910	200	Y	9.0	3
NB	0.0%	0.0%	N	0	0	.000	0		13.0	0
SB	-1.0%	2.0%	N	0	20	.910	300	Y	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1					*											*	1.9	4	A
2			*					*			*					*	0.0	24	A
3								*						*			46.1	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	20	0	0	.910	22	0	0
NB	0	0	0	.000	0	0	0
SB	0	1714	0	.910	0	1884	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
WB	LT	22	1	1.00	22	1.00	0.00
SB	TH	1884	3	1.10	2072	0.00	0.00

TREMONT ST/TEMPLE PL

1995 BUILD PM PEAK WITH EXISTING NETWORK

date. 04-11-1989 time. 07.59:09

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	LT	1800	1	0.900	0.990	0.995	0.849	1.000	0.900	1.000	0.950	1158
SB	TH	1800	3	0.933	0.990	1.005	1.000	0.972	0.900	1.000	1.000	4388

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	LT	22	1158	0.02	0.02	27	0.82	*
SB	TH	2072	4388	0.47	0.58	2531	0.82	*

CYCLE= 80.0 LOST=32.0 SUM V/S CRIT= 0.49 TOTAL V/C= 0.82

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	LT	0.82	*	0.02	80.0	29.57	27	79.72	1.00	109.29	F	1.1	4
SB	TH	0.82	*	0.58	80.0	10.31	2531	1.86	0.85	10.35	B	17.7	54

DIR	STREET	DELAY	LOS
WB	TEMPLE PL	109.29	F
SB	TREMONT ST	10.35	B

INTERSECTION DELAY = 11.39 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

TREMONT ST/WEST ST

1995 BUILD AM PEAK WITH EXISTING NETWORK

Date 04-11-1989 Time 08:01.45

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=2AM GEOMETRICS=2AM SIGNAL=2AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

DIR	STREET	VOLUMES LT	TH	RT	TOTAL	# OF LANES LT	TH	RT	LANE WIDTH LT	TH	RT	CROSS WALK
EB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
WB	WEST ST	31	0	0	31	1	0	0	12.0	0.0	0.0	24
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	TREMONT ST	0	1289	0	1289	0	3	0	0.0	10.0	0.0	40

TOTAL VOLUME = 1320

TRAFFIC & ROADWAY CONDITIONS

DIR	GRADE	%HV	ADJ PARK Y/N	MOVES	BUSES	PHF	PEDESTRIANS CROSS	BUT	MIN	ARR TIME	TYPE
EB	0.0%	0.0%	N	0	0	.000	0			9.0	0
WB	0.0%	0.0%	Y	10	0	.960	200	Y		9.0	3
NB	0.0%	0.0%	N	0	0	.000	0			13.0	0
SB	-1.0%	0.0%	N	0	20	.960	300	Y		13.0	3

PHASINGS

	EASTBOUND l	t	r	p	WESTBOUND l	t	r	p	NORTHBOUND l	t	r	p	SOUTHBOUND l	t	r	p	GREEN	Y+R	PRE/ACT
1					*											*	3.3	4	A
2			*					*			*					*	0.0	24	A
3								*						*			44.7	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	31	0	0	.960	32	0	0
NB	0	0	0	.000	0	0	0
SB	0	1289	0	.960	0	1343	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
WB	LT	32	1	1.00	32	1.00	0.00
SB	TH	1343	3	1.10	1477	0.00	0.00

TREMONT ST/WEST ST

1995 BUILD AM PEAK WITH EXISTING NETWORK

date 04-11-1989 time. 08:01:46

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	LT	1800	1	1.000	0.990	0.995	0.849	1.000	0.900	1.000	0.950	1287
SB	TH	1800	3	0.933	0.990	1.005	1.000	0.972	0.900	1.000	1.000	4388

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	LT	32	1287	0.03	0.04	54	0.60	*
SB	TH	1477	4388	0.34	0.56	2450	0.60	*

CYCLE= 80.0 LOST=32.0 SUM V/S CRIT= 0.36 TOTAL V/C= 0.60

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	LT	0.60	*	0.04	80.0	28.64	54	12.27	1.00	40.91	E	0.8	3
SB	TH	0.60	*	0.56	80.0	8.94	2450	0.29	0.85	7.84	B	13.2	40

DIR	STREET	DELAY	LOS
WB	WEST ST	40.91	E
SB	TREMONT ST	7.84	B

INTERSECTION DELAY = 8.55 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

TREMONT ST/WEST ST

1995 BUILD PM PEAK WITH EXISTING NETWORK

Date 04-11-1989 Time. 08:03.32

1985 HCM - CHAPTER 9. SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=2PM GEOMETRICS=2PM SIGNAL=2PM

LOCATED IN CEDRY

VOLUME & GEOMETRICS

DIR	STREET	VOLUMES LT	TH	RT	TOTAL	# OF LANES LT	TH	RT	LANE WIDTH LT	TH	RT	CROSS WALK
EB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
WB	WEST ST	31	0	0	31	1	0	0	12.0	0.0	0.0	24
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	TREMONT ST	0	1735	0	1735	0	3	0	0.0	10.0	0.0	40

TOTAL VOLUME = 1766

TRAFFIC & ROADWAY CONDITIONS

DIR	GRADE	%HV	ADJ PARK Y	N	MOVES	BUSES	PHF	PEDESTRIANS CROSS	BUT	MIN	TIME	ARR TYPE
EB	0.0%	0.0%	N		0	0	.000	0			9.0	0
WB	0.0%	0.0%	Y		10	0	.920	200	Y		9.0	3
NB	0.0%	0.0%	N		0	0	.000	0			13.0	0
SB	-1.0%	0.0%	N		0	20	.920	300	Y		13.0	3

PHASINGS

	EASTBOUND l	t	r	p	WESTBOUND l	t	r	p	NORTHBOUND l	t	r	p	SOUTHBOUND l	t	r	p	GREEN	Y+R	PRE/ACT
1					*											*	2.5	4	A
2			*					*			*					*	0.0	24	A
3								*						*			45.5	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFF	THFF	RTFF
EB	0	0	0	.000	0	0	0
WB	31	0	0	.920	34	0	0
NB	0	0	0	.000	0	0	0
SB	0	1735	0	.920	0	1886	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
WB	LT	34	1	1.00	34	1.00	0.00
SB	TH	1886	3	1.10	2074	0.00	0.00

TREMONT ST/WEST ST

1995 BUILD PM PEAK WITH EXISTING NETWORK

date 04-11-1989 time. 08:03:33

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	LT	1800	1	1.000	0.990	0.995	0.849	1.000	0.900	1.000	0.950	1287
SB	TH	1800	3	0.933	0.990	1.005	1.000	0.972	0.900	1.000	1.000	4388

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	LT	34	1287	0.03	0.03	41	0.83	*
SB	TH	2074	4388	0.47	0.57	2495	0.83	*

CYCLE= 80.0 LOST=32.0 SUM V/S CRIT= 0.50 TOTAL V/C= 0.83

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	LT	0.83	*	0.03	80.0	29.28	41	64.05	1.00	93.33	F	1.5	5
SB	TH	0.83	*	0.57	80.0	10.73	2495	2.11	0.85	10.92	B	18.1	55

DIR	STREET	DELAY	LOS
WB	WEST ST	93.33	F
SB	TREMONT ST	10.92	B

INTERSECTION DELAY = 10.23 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

TREMONT ST/AVERY ST

1995 BUILD AM PEAK WITH EXISTING NETWORK]

Date. 04-10-1989 Time 15 41:54

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=3AM GEOMETRICS=3AM SIGNAL=3AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
WB	AVERY ST	636	0	0	636	2	0	0	12.0	0.0	0.0	24
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	TREMONT ST	0	1355	0	1355	0	3	0	0.0	10.0	0.0	40

TOTAL VOLUME = 1991

TRAFFIC & ROADWAY CONDITIONS

			ADJ	PARK.			PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	0.0%	N	0	0	.000	0		9.0	0
WB	1.0%	2.0%	Y	10	0	.960	400	Y	9.0	3
NB	0.0%	0.0%	N	0	0	.000	0		13.0	0
SB	-1.0%	2.0%	N	0	20	.960	700	Y	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1								*						*			41.8	4	A
2					*											*	30.2	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	636	0	0	.960	663	0	0
NB	0	0	0	.000	0	0	0
SB	0	1355	0	.960	0	1411	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
WB	LT	663	2	1.05	696	1.00	0.00
SB	TH	1411	3	1.10	1553	0.00	0.00

TREMONT ST/AVERY ST

1995 BUILD AM PEAK WITH EXISTING NETWORK]

date 04-10-1989 time. 15.41:55

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	LT	1800	2	1.000	0.990	0.995	0.925	1.000	0.900	1.000	0.920	2715
SB	TH	1800	3	0.933	0.990	1.005	1.000	0.972	0.900	1.000	1.000	4388

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	LT	695	2715	0.26	0.38	1026	0.68	*
SB	TH	1553	4388	0.35	0.52	2291	0.68	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.61 TOTAL V/C= 0.68

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CN	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	LT	0.68	*	0.38	80.0	15.81	1026	1.47	1.00	17.28	C	9.2	28
SB	TH	0.68	*	0.52	80.0	10.75	2291	0.66	0.85	9.70	B	15.0	46

DIR	STREET	DELAY	LOS
WB	AVERY ST	17.28	C
SB	TREMONT ST	9.70	B

INTERSECTION DELAY = 12.05 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

TREMONT ST/AVERY ST

1995 BUILD PM PEAK WITH EXISTING NETWORK

Date: 04-10-1989 Time. 15:48:04

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=3PM GEOMETRICS=3PM SIGNAL=3PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
WB	AVERY ST	993	0	0	993	2	0	0	12.0	0.0	0.0	24
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	TREMONT ST	0	1781	0	1781	0	3	0	0.0	10.0	0.0	40

TOTAL VOLUME = 2774

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK.				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	0.0%	N	0	0	.000	0		9.0	0
WB	1.0%	0.0%	Y	10	0	.940	400	Y	9.0	3
NB	0.0%	0.0%	N	0	0	.000	0		13.0	0
SB	-1.0%	0.0%	N	0	20	.940	700	Y	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1								*						*			38.7	4	A
2					*											*	33.3	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	993	0	0	.940	1056	0	0
NB	0	0	0	.000	0	0	0
SB	0	1781	0	.940	0	1895	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
WB	LT	1056	2	1.05	1109	1.00	0.00
SB	TH	1895	3	1.10	2084	0.00	0.00

TREMONT ST/AVERY ST

1995 BUILD PM PEAK WITH EXISTING NETWORK

date 04-10-1989 time: 15 48:04

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	LT	1800	2	1.000	0.990	0.995	0.925	1.000	0.900	1.000	0.920	2715
SE	TH	1800	3	0.933	0.990	1.005	1.000	0.972	0.900	1.000	1.000	4388

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	LT	1109	2715	0.41	0.42	1130	0.98	*
SE	TH	2094	4388	0.47	0.48	2123	0.98	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.88 TOTAL V/C= 0.98

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WE	LT	0.98	*	0.42	80.0	17.52	1130	17.29	1.00	34.80	D	20.1	61
SE	TH	0.98	*	0.48	80.0	15.43	2123	11.91	0.85	23.24	C	26.8	81

DIR	STREET	DELAY	LOS
WB	AVERY ST	34.80	D
SB	TREMONT ST	23.24	C

INTERSECTION DELAY = 27.25 INTERSECTION LOS=D

THE EXISTING TIMING IS OPTIMAL

BOYLSTON ST/TREMONT ST

1995 BUILD AM PEAK WITH EXISTING NETWORK

Date 04-10-1989 Time: 15:50:34

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=4AM GEOMETRICS=4AM SIGNAL=4AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	BOYLSTON ST	0	919	157	1076	0	2	0	0.0	12.0	0.0	46
WB	BOYLSTON ST	0	0	0	0	0	0	0	0.0	0.0	0.0	24
NB	TREMONT ST	0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	TREMONT ST	660	902	296	1858	0	4	0	0.0	10.0	0.0	40

TOTAL VOLUME = 2934

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	1.0%	2.0%	N	0	10	.930	600	Y	18.5	3
WB	0.0%	0.0%	N	10	0	.000	400	Y	18.5	3
NB	0.0%	0.0%	N	0	0	.000	500	Y	13.0	0
SB	-1.0%	2.0%	N	0	20	.930	700	Y	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1		*	*													*	24.9	4	A
2				*				*				*				*	0.0	20	A
3													*	*	*		27.1	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	919	157	.930	0	988	169
WB	0	0	0	.000	0	0	0
NB	0	0	0	.000	0	0	0
SB	660	902	296	.930	710	970	318

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
EB	TH-RT	1157	2	1.05	1215	0.00	0.15
SB	LT-TH-RT	1998	4	1.10	2198	0.36	0.16

BOYLSTON ST/TREMONT ST

1995 BUILD AM PEAK WITH EXISTING NETWORK

date 04-10-1989 time: 15:50:35

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH-RT	1800	2	1.000	0.990	1.000	1.000	0.979	0.900	0.978	1.000	3072
SB	LT-TH-RT	1600	4	0.933	0.990	1.005	1.000	0.979	0.900	0.976	1.000	5113

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH-RT	1215	3072	0.40	0.31	957	1.27	*
SB	LT-TH-RT	2198	5113	0.43	0.34	1731	1.27	*

CYCLE= 80.0 LOST=28.0 SUM V/S CRIT= 0.83 TOTAL V/C= 1.27

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH-RT	1.27	*	0.31	80.0	23.84	957	100.92	0.85	106.04	F	53.2	160
SB	LT-TH-RT	1.27	*	0.34	80.0	23.33	1731	97.64	0.85	102.83	F	88.9	267

DIR	STREET	DELAY	LOS
EB	BOYLSTON ST	106.04	F
SB	TREMONT ST	102.83	F

INTERSECTION DELAY =103.97 INTERSECTION LOS=F

THE EXISTING TIMING IS OPTIMAL

BOYLSTON ST/TREMONT ST

1995 BUILD PM PEAK WITH EXISTING NETWORK

Date: 04-10-1989 Time: 15.54.12

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=4PM GEOMETRICS=4PM SIGNAL=4PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	BOYLSTON ST	0	888	331	1219	0	1	0	0.0	12.0	0.0	46
WB	BOYLSTON ST	0	0	0	0	0	0	0	0.0	0.0	0.0	24
NB	TREMONT ST	0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	TREMONT ST	629	1352	794	2775	0	4	0	0.0	10.0	0.0	40

TOTAL VOLUME = 3994

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.920	600	Y	18.5	3
WB	0.0%	0.0%	N	10	0	.000	400	Y	18.5	3
NB	0.0%	0.0%	N	0	0	.000	500	Y	13.0	0
SB	-1.0%	2.0%	N	0	20	.920	700	Y	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1		*	*													*	30.3	4	A
2				*				*				*				*	0.0	20	A
3													*	*	*		21.7	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	888	331	.920	0	965	360
WB	0	0	0	.000	0	0	0
NB	0	0	0	.000	0	0	0
SB	629	1352	794	.920	684	1470	863

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
EB	TH-RT	1325	1	1.00	1325	0.00	0.27
SB	LT-TH-RT	3016	4	1.10	3318	0.23	0.29

BOYLSTON ST/TREMONT ST

1995 BUILD PM PEAK WITH EXISTING NETWORK

date 04-10-1989 time 15:54:13

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH-RT	2100	1	1.000	0.990	1.000	1.000	0.958	0.900	0.799	1.000	1432
SB	LT-TH-RT	1600	4	0.933	0.990	1.005	1.000	0.979	0.900	0.957	1.000	5013

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH-RT	1325	1432	0.93	0.38	543	2.44	*
SB	LT-TH-RT	3318	5013	0.66	0.27	1359	2.44	*

CYCLE= 80.0 LOST=28.0 SUM V/S CRIT= 1.59 TOTAL V/C= 2.44

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH-RT	2.44	*	0.38	80.0	156.53	543	505.51	0.85	562.73	F	278.4	835
SB	LT-TH-RT	2.44	*	0.27	80.0	47.76	1359	501.46	0.85	466.84	F	532.9	1598

DIR	STREET	DELAY	LOS
EB	BOYLSTON ST	562.73	F
SB	TREMONT ST	466.84	F

INTERSECTION DELAY =494.21 INTERSECTION LOS=F

THE EXISTING TIMING IS OPTIMAL

STUART ST/KNEELAND ST/WASHINGTON ST
1995 BUILD AM PEAK EXISTING NETWORK
Date 04-10-1989 Time: 15:57:54

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=5AM GEOMETRICS=5AM SIGNAL=5AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	STUART ST	153	741	38	932	1	2	0	11.0	11.0	0.0	48
WB	KNEELAND ST	126	669	313	1108	0	2	1	0.0	11.0	11.0	48
NB	WASHINGTON ST	222	417	106	745	0	2	0	0.0	12.0	0.0	36
SB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	40

TOTAL VOLUME = 2785

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	Y	15	10	.920	200	Y	15.0	3
WB	0.0%	2.0%	Y	15	10	.920	200	Y	15.0	3
NB	0.0%	2.0%	Y	15	15	.920	200	Y	13.0	3
SB	0.0%	0.0%	N	0	0	.000	200	Y	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1					*	*	*										0.0	0	A
2	*	*	*		*	*	*					*				*	40.1	4	A
3				*				*	*	*	*						31.9	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	153	741	38	.920	166	805	41
WB	126	669	313	.920	137	727	340
NB	222	417	106	.920	241	453	115
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT	166	1	1.00	166	1.00	0.00
EB	TH-RT	847	2	1.05	889	0.00	0.05
WB	LT-TH	864	2	1.05	907	0.16	0.00
WB	RT	340	1	1.00	340	0.00	1.00
NB	LT-TH-RT	510	2	1.05	850	0.30	0.14

STUART ST/KNEELAND ST/WASHINGTON ST

1995 BUILD AM PEAK EXISTING NETWORK

Date: 04-10-1989 time 15.57:55

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.254	394
EB	TH-RT	1800	2	0.967	0.990	1.000	0.912	0.979	0.900	0.988	1.000	2735
WB	LT-TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.853	2644
WB	RT	1800	1	0.967	0.990	1.000	0.824	0.958	0.900	0.755	1.000	924
NB	LT-TH-RT	1800	2	1.000	0.990	1.000	0.912	0.969	0.900	0.965	0.927	2535

SUPPLEMENTAL WORKSHEET FOR

LEFT-TURN ADJUSTMENT FACTOR FLT

INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	No	Vo	Plto	LGo
EB	80	40	1	166	847	166	1.00	2	864	0.16	0

CALCULATIONS

DIR	Sob	Yo	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
EB	2653	0.326	20.830	0.335	1.000	19.275	0.000	0.000	3.359	0.254	0.254

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	166	394	0.42	0.50	198	0.84	*
EB	TH-RT	889	2735	0.33	0.50	1371	0.65	
WB	LT-TH	907	2644	0.34	0.50	1326	0.68	
WB	RT	340	924	0.37	0.50	463	0.73	
NB	LT-TH-RT	850	2535	0.34	0.40	1011	0.84	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.76 TOTAL V/C= 0.84

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CN	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	0.84	*	0.50	80.0	13.07	198	21.59	0.85	29.46	D	2.7	9
EB	TH-RT	0.65		0.50	80.0	11.20	1371	0.85	0.85	10.24	B	9.4	29
WB	LT-TH	0.68		0.50	80.0	11.51	1326	1.21	0.85	10.81	B	9.6	30
WB	RT	0.73		0.50	80.0	11.97	463	5.02	0.85	14.44	B	3.8	12
NB	LT-TH-RT	0.84	*	0.40	80.0	16.54	1011	5.37	0.85	18.62	C	10.9	33

DIR	STREET	DELAY	LOS
EB	STUART ST	13.27	B
WB	KNEELAND ST	11.80	B
NB	WASHINGTON ST	18.62	C

INTERSECTION DELAY = 14.13 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

STUART ST/KNEELAND ST/WASHINGTON ST
1995 BUILD PM PEAK WITH EXISTING NETWORK
Date 04-10-1989 Time: 16:07:54

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=5PM GEOMETRICS=5PM SIGNAL=5PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	STUART ST	182	740	73	995	1	2	0	11.0	11.0	0.0	48
WB	KNEELAND ST	105	857	201	1163	0	2	1	0.0	11.0	11.0	48
NB	WASHINGTON ST	82	211	216	509	0	2	0	0.0	12.0	0.0	36
SB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	40

TOTAL VOLUME = 2667

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK.				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	Y	15	10	.900	200	Y	15.0	3
WB	0.0%	2.0%	Y	15	10	.900	200	Y	15.0	3
NB	0.0%	2.0%	Y	15	15	.900	200	Y	13.0	3
SB	0.0%	0.0%	N	0	0	.000	200	Y	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1					*	*	*										0.0	0	A
2	*	*	*		*	*	*					*				*	52.4	4	A
3				*				*	*	*	*						19.6	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	182	740	73	.900	202	822	81
WB	105	857	201	.900	117	952	223
NB	82	211	216	.900	91	234	240
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT	202	1	1.00	202	1.00	0.00
EB	TH-RT	903	2	1.05	949	0.00	0.09
WB	LT-TH	1069	2	1.05	1122	0.11	0.00
WB	RT	223	1	1.00	223	0.00	1.00
NB	LT-TH-RT	566	2	1.05	594	0.16	0.42

STUART ST/KNEELAND ST/WASHINGTON ST
1995 BUILD PM PEAK WITH EXISTING NETWORK
date 04-10-1989 time. 15:07:55

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.200	311
EB	TH-RT	1800	2	0.967	0.990	1.000	0.912	0.979	0.900	0.978	1.000	2707
WB	LT-TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.879	2725
WB	RT	1800	1	0.967	0.990	1.000	0.824	0.958	0.900	0.755	1.000	924
NB	LT-TH-RT	1800	2	1.000	0.990	1.000	0.912	0.969	0.900	0.896	0.960	2438

SUPPLEMENTAL WORKSHEET FOR
LEFT-TURN ADJUSTMENT FACTOR FLT
INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	No	Vo	Plto	LGo
EB	80	52	1	202	903	202	1.00	2	1069	0.11	0

CALCULATIONS

DIR	Sop	Yo	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
EB	2798	0.392	35.335	0.207	1.000	17.060	0.000	0.000	5.435	0.200	0.200

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	202	311	0.65	0.65	204	0.99	*
EB	TH-RT	949	2707	0.35	0.65	1773	0.53	
WB	LT-TH	1122	2725	0.41	0.65	1785	0.63	
WB	RT	223	924	0.24	0.65	605	0.37	
NB	LT-TH-RT	594	2438	0.24	0.25	598	0.99	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.89 TOTAL V/C= 0.99

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CN	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	0.99	*	0.65	80.0	10.37	204	47.13	0.85	48.87	E	4.3	14
EB	TH-RT	0.53		0.65	80.0	5.57	1773	0.12	0.85	4.84	A	6.9	22
WB	LT-TH	0.63		0.65	80.0	6.15	1785	0.54	0.85	5.69	B	8.2	26
WB	RT	0.37		0.65	80.0	4.77	605	0.00	0.85	4.06	A	1.7	6
NB	LT-TH-RT	0.99	*	0.25	80.0	22.90	598	27.09	0.85	42.49	E	13.4	41

DIR	STREET	DELAY	LOS
EB	STUART ST	12.57	B
WB	KNEELAND ST	5.42	E
NB	WASHINGTON ST	42.49	E

INTERSECTION DELAY = 15.21 INTERSECTION LOS=C

THE EXISTING TIMING IS OPTIMAL

LAGRANGE ST/BEACH ST/WASHINGTON ST
1995 BUILD AM PEAK EXISTING NETWORK
Date 04-10-1989 Time 16.09.40

1985 HCM - CHAPTER 9. SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=6AM GEOMETRICS=6AM SIGNAL=6AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	LAGRANGE ST	29	0	0	29	1	0	0	12.0	0.0	0.0	22
WB	BEACH ST	0	0	90	90	0	0	1	0.0	0.0	12.0	28
NB	WASHINGTON ST	0	884	0	884	0	2	0	0.0	10.0	0.0	32
SB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	40

TOTAL VOLUME = 1003

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	15	0	.900	200	Y	10.0	3
WB	0.0%	2.0%	Y	10	0	.900	200	Y	10.0	3
NB	0.0%	2.0%	N	15	15	.900	200	Y	17.0	3
SB	0.0%	0.0%	N	0	0	.000	200	Y	17.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*											*					3.8	4	A
2				*				*		*							63.7	4	A
3				*			*					*					15.5	4	A

CYCLE= 85.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	29	0	0	.900	32	0	0
WB	0	0	90	.900	0	0	100
NB	0	884	0	.900	0	982	0
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
EB	LT	32	1	1.00	32	1.00	0.00
WB	RT	100	1	1.00	100	0.00	1.00
NB	TH	982	2	1.05	1031	0.00	0.00

LAGRANGE ST/BEACH ST/WASHINGTON ST

1995 BUILD AM PEAK EXISTING NETWORK

date. 04-10-1989 time. 16.09.41

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	1.000	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1524
WB	RT	1800	1	1.000	0.990	1.000	0.849	1.000	0.900	0.850	1.000	1157
NB	TH	1800	2	0.933	0.990	1.000	1.000	0.969	0.900	1.000	1.000	2900

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	32	1524	0.02	0.04	61	0.53	*
WB	RT	100	1157	0.09	0.16	189	0.53	*
NB	TH	1031	2900	0.36	0.67	1946	0.53	*

CYCLE= 95.0 LOST=12.0 SUM V/S CRIT= 0.46 TOTAL V/C= 0.53

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	0.53	*	0.04	95.0	34.00	61	2.86	1.00	36.86	D	0.8	3
WB	RT	0.53	*	0.16	95.0	27.68	189	0.93	0.85	24.32	C	2.2	8
NB	TH	0.53	*	0.67	95.0	6.07	1946	0.09	0.85	5.24	B	8.5	27

DIR	STREET	DELAY	LOS
EB	LAGRANGE ST	36.86	D
WB	BEACH ST	24.32	C
NB	WASHINGTON ST	5.24	B

INTERSECTION DELAY = 7.75 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

LAGRANGE ST/BEACH ST/WASHINGTON ST

1995 BUILD PM PEAK WITH EXISTING NETWORK

Date 04-10-1999 Time. 16:11:45

1985 HCM - CHAPTER 9. SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=6PM GEOMETRICS=6PM SIGNAL=6PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	LAGRANGE ST	28	0	0	28	1	0	0	12.0	0.0	0.0	22
WB	BEACH ST	0	0	324	324	0	0	1	0.0	0.0	12.0	28
NB	WASHINGTON ST	0	599	0	599	0	2	0	0.0	10.0	0.0	32
SB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	40

TOTAL VOLUME = 951

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	15	0	.900	200	Y	10.0	3
WB	0.0%	2.0%	Y	10	0	.900	200	Y	10.0	3
NB	0.0%	2.0%	N	15	15	.900	200	Y	17.0	3
SB	0.0%	0.0%	N	0	0	.000	200	Y	17.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*											*					3.0	4	A
2			*					*		*							34.9	4	A
3			*				*					*					45.1	4	A

CYCLE= 95.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	28	0	0	.900	31	0	0
WB	0	0	324	.900	0	0	360
NB	0	599	0	.900	0	666	0
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
EB	LT	31	1	1.00	31	1.00	0.00
WB	RT	360	1	1.00	360	0.00	1.00
NB	TH	666	2	1.05	699	0.00	0.00

LAGRANGE ST/BEACH ST/WASHINGTON ST
1995 BUILD PM PEAK WITH EXISTING NETWORK
date 04-10-1989 time: 16:11 46

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	1.000	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1524
WB	RT	1800	1	1.000	0.990	1.000	0.849	1.000	0.900	0.650	1.000	1157
NB	Th	1800	2	0.933	0.990	1.000	1.000	0.969	0.900	1.000	1.000	2900

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	31	1524	0.02	0.03	47	0.66	*
WB	RT	360	1157	0.31	0.47	550	0.66	*
NB	Th	699	2900	0.24	0.37	1067	0.66	*

CYCLE= 95.0 LOST=12.0 SUM V/S CRIT= 0.57 TOTAL V/C= 0.66

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	0.66	*	0.03	95.0	34.59	47	22.12	1.00	56.71	E	1.0	4
WB	RT	0.66	*	0.47	95.0	14.46	550	2.22	0.85	14.18	B	5.0	16
NB	TH	0.66	*	0.37	95.0	19.01	1067	1.16	0.85	17.14	C	11.1	34

DIR	STREET	DELAY	LOS
EB	LAGRANGE ST	56.71	E
WB	BEACH ST	14.18	B
NB	WASHINGTON ST	17.14	C

INTERSECTION DELAY = 17.29 INTERSECTION LOS=C

THE EXISTING TIMING IS OPTIMAL

BOYLSTON ST/ESSEX ST/WASHINGTON ST

1995 BUILD AM PEAK WITH EXISTING NETWORK

Date: 04-11-1989 Time: 10.57.23

1985 HCM - CHAPTER 9 SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=7AM GEOMETRICS=7AM SIGNAL=7AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	BOYLSTON ST	109	1253	0	1362	1	2	0	11.0	11.0	0.0	28
WB	ESSEX ST	0	0	0	0	0	0	0	0.0	0.0	0.0	31
NB	WASHINGTON ST	0	469	534	1003	0	1	2	0.0	11.0	11.0	36
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	36

TOTAL VOLUME = 2365

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	0	.930	200	Y	14.8	3
WB	0.0%	0.0%	N	0	0	.000	200		14.8	0
NB	0.0%	2.0%	N	0	0	.930	550	Y	16.0	3
SB	0.0%	0.0%	N	0	0	.000	750	Y	16.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*	*										*					31.5	4	A
2				*						*	*						22.5	4	A
3				*			*					*				*	0.0	18	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	109	1253	0	.930	117	1347	0
WB	0	0	0	.000	0	0	0
NB	0	469	534	.930	0	504	574
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	V	P1t	Prt
EB	LT	117	1	1.00	117	1.00	0.00
EB	TH	1347	2	1.05	1415	0.00	0.00
NB	TH	504	1	1.00	504	0.00	0.00
NB	RT	574	2	1.05	603	0.00	1.00

BOYLSTON ST/ESSEX ST/WASHINGTON ST

1995 BUILD AM PEAK WITH EXISTING NETWORK

date 08-11-1989 time 10:57:24

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1473
EB	TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3101
WB	TH	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	1550
WB	RT	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	0.750	1.000	2326

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	117	1473	0.08	0.39	580	0.20	
EB	TH	1415	3101	0.46	0.39	1222	1.16	*
WB	TH	604	1550	0.39	0.28	436	1.16	*
WB	RT	605	2326	0.26	0.28	653	0.92	

CYCLE= 80.0 LOST=26.0 SUM V/S CRIT= 0.78 TOTAL V/C= 1.16

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CRI	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	0.20		0.39	80.0	12.13	580	0.00	1.00	12.13	B	1.6	6
EB	TH	1.16	*	0.39	80.0	20.55	1222	62.78	0.85	70.81	F	43.5	131
WB	TH	1.16	*	0.28	80.0	23.29	436	74.09	0.85	82.77	F	19.1	58
WB	RT	0.92		0.28	80.0	21.22	653	14.85	0.85	30.69	D	11.0	34

DIR	STREET	DELAY	LOS
EB	BOYLSTON ST	66.32	F
WB	WASHINGTON ST	54.41	E

INTERSECTION DELAY = 61.32 INTERSECTION LOS=F

THE EXISTING TIMING IS OPTIMAL

BOYLSTON ST/ESSEX ST/WASHINGTON ST

1995 BUILD PM PEAK WITH EXISTING NETWORK

Date 04-11-1989 Time: 10:59:16

1985 HCM - CHAPTER 9 SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=7PM GEOMETRICS=7PM SIGNAL=7PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

DIR	STREET	VOLUMES LT	TH	RT	TOTAL	# OF LANES LT	TH	RT	LANE WIDTH LT	TH	RT	CROSS WALK
EB	BOYLSTON ST	290	1535	0	1825	1	2	0	11.0	11.0	0.0	28
WB	ESSEX ST	0	0	0	0	0	0	0	0.0	0.0	0.0	31
NB	WASHINGTON ST	0	412	535	947	0	1	2	0.0	11.0	11.0	38
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	36

TOTAL VOLUME = 2772

TRAFFIC & ROADWAY CONDITIONS

DIR	GRADE	%-V	ADJ PARK Y/N	MOVES	BUSES	PHF	PEDESTRIANS CROSS	BUT	MIN TIME	ARR TYPE
EB	0.0%	2.0%	N	0	0	.910	200	Y	14.8	3
WB	0.0%	2.0%	N	0	0	.000	200		14.8	0
NB	0.0%	2.0%	N	0	0	.910	590	Y	16.0	3
SB	0.0%	0.0%	N	0	0	.000	750	Y	16.0	3

PHASINGS

	EASTBOUND l	t	r	p	WESTBOUND l	t	r	p	NORTHBOUND l	t	r	p	SOUTHBOUND l	t	r	p	GREEN	Y+R	PRE/ACT
1	*	*										*					35.7	4	A
2				*						*	*						18.3	4	A
3				*				*				*				*	0.0	18	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFF	THFF	RTFF
EB	290	1535	0	.910	319	1687	0
WB	0	0	0	.000	0	0	0
NB	0	412	535	.910	0	453	588
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT	319	1	1.00	319	1.00	0.00
EB	TH	1687	2	1.05	1771	0.00	0.00
NB	TH	453	1	1.00	453	0.00	0.00
NB	RT	588	2	1.05	617	0.00	1.00

BOYLSTON ST/ESSEX ST/WASHINGTON ST

1995 BUILD PM PEAK WITH EXISTING NETWORK

date 04-11-1989 time 10.59.17

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1473
EB	TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3101
WB	TH	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	1550
WB	RT	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	0.750	1.000	2326

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	319	1473	0.22	0.45	658	0.48	
EB	TH	1771	3101	0.57	0.45	1385	1.28	*
WB	TH	453	1550	0.29	0.23	354	1.28	*
WB	RT	617	2326	0.27	0.23	531	1.16	

CYCLE= 80.0 LOST=26.0 SUM V/S CRIT= 0.86 TOTAL V/C= 1.28

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CRI	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	0.48		0.45	80.0	11.88	658	0.00	1.00	11.88	B	3.9	13
EB	TH	1.28	*	0.45	80.0	21.71	1385	101.74	0.85	104.93	F	74.3	224
WB	TH	1.28	*	0.23	80.0	25.57	354	114.80	0.85	119.31	F	23.4	71
WB	RT	1.16		0.23	80.0	24.64	531	72.62	0.85	82.66	F	22.8	69

DIR	STREET	DELAY	LOS
EB	BOYLSTON ST	90.74	F
WB	WASHINGTON ST	98.18	F

INTERSECTION DELAY = 93.26 INTERSECTION LOS=F

THE EXISTING TIMING IS OPTIMAL

BOYLSTON ST/ESSEX ST/WASHINGTON ST

1995 BUILD SAT PEAK WITH EXISTING NETWORK

Date 04-11-1989 Time 11:01.10

1985 HCM - CHAPTER 9. SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=7SAT GEOMETRICS=7SAT SIGNAL=7SAT

LOCATED IN CEDLY

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	BOYLSTON ST	280	1230	0	1490	1	2	0	11.0	11.0	0.0	28
WB	ESSEX ST	0	0	0	0	0	0	0	0.0	0.0	0.0	31
NB	WASHINGTON ST	0	290	353	643	0	1	2	0.0	11.0	11.0	36
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	36

TOTAL VOLUME = 2133

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK			PEDESTRIANS			ARR
DIR	GRADE	%HV	VOL	MOVES	BUSES	PHF	CROSS	BUT MIN TIME	TYPE
EB	0.0%	0.0%	N	0	0	.930	200	Y 14.8	3
WB	0.0%	0.0%	N	0	0	.000	200	14.8	0
NB	0.0%	0.0%	N	0	0	.930	550	Y 16.0	3
SB	0.0%	0.0%	N	0	0	.000	750	Y 16.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*	*										*					37.3	4	A
2				*						*	*						16.7	4	A
3				*				*				*				*	0.0	18	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	280	1230	0	.930	280	1322	0
WB	0	0	0	.000	0	0	0
NB	0	290	353	.930	0	312	380
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
EB	LT	280	1	1.00	280	1.00	0.00
EB	TH	1323	2	1.05	1389	0.00	0.00
NB	TH	312	1	1.00	312	0.00	0.00
NB	RT	380	2	1.05	399	0.00	1.00

BOYLSTON ST/ESSEX ST/WASHINGTON ST

1995 BUILD SAT PEAK WITH EXISTING NETWORK

date: 04-11-1989 time 11 01 1

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1473
EB	TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3101
NB	TH	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	1550
NB	RT	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	0.750	1.000	2326

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	290	1473	0.19	0.47	686	0.41	
EB	TH	1389	3101	0.45	0.47	1444	0.96	*
NB	TH	312	1550	0.20	0.21	324	0.96	*
NB	RT	399	2326	0.17	0.21	487	0.82	

CYCLE= 80.0 LOST=26.0 SUM V/S CRIT= 0.65 TOTAL V/C= 0.96

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CN	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	0.41		0.47	80.0	10.71	686	0.00	1.00	10.71	B	3.3	11
EB	TH	0.96	*	0.47	80.0	15.71	1444	12.04	0.85	23.59	C	19.1	58
NB	TH	0.96	*	0.21	80.0	23.90	324	30.83	0.85	46.43	E	8.0	25
NB	RT	0.82		0.21	80.0	22.94	487	8.80	0.85	26.98	D	7.0	22

DIR	STREET	DELAY	LOS
EB	BOYLSTON ST	21.43	C
NB	WASHINGTON ST	35.52	D

INTERSECTION DELAY = 25.64 INTERSECTION LOS=D

THE EXISTING TIMING IS OPTIMAL

AVERY ST/HAYWARD ST/WASHINGTON ST
1995 BUILD AM PEAK WITH EXISTING NETWORK]
Date 04-10-1989 Time: 16:25:08

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=8AM GEOMETRICS=8AM SIGNAL=8AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	AVERY ST	0	0	0	0	0	0	0	0.0	0.0	0.0	22
WB	HAYWARD ST	0	106	10	116	0	2	0	0.0	12.0	0.0	24
NB	WASHINGTON ST	573	0	0	573	2	0	0	12.0	0.0	0.0	36
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	0

TOTAL VOLUME = 689

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK			PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT MIN TIME	TYPE
EB	0.0%	0.0%	N	5	0	.000	200	Y 12.5	3
WB	0.0%	0.0%	N	0	0	.900	200	Y 12.5	3
NB	0.0%	0.0%	Y	10	0	.900	200	Y 12.0	3
SB	0.0%	0.0%	N	0	0	.000	200	Y 12.0	0

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1						*	*					*					10.7	4	A
2								*	*							*	61.3	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	PTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	0	106	10	.900	0	118	11
NB	573	0	0	.900	637	0	0
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
WB	TH-RT	129	2	1.05	135	0.00	0.09
NB	LT	637	2	1.05	669	1.00	0.00

AVERY ST/HAYWARD ST/WASHINGTON ST
1995 BUILD AM PEAK WITH EXISTING NETWORK]
date. 04-10-1989 time: 16:25:09

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	TH-RT	1800	2	1.000	0.990	1.000	1.000	1.000	0.900	0.987	1.000	3166
NB	LT	1800	2	1.000	0.990	1.000	0.925	1.000	0.900	1.000	0.920	2728

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	TH-RT	135	3166	0.04	0.13	423	0.32	*
NB	LT	669	2728	0.25	0.77	2091	0.32	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.29 TOTAL V/C= 0.32

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	TH-RT	0.32	*	0.13	80.0	23.83	423	0.00	0.85	20.26	C	2.5	8
NB	LT	0.32	*	0.77	80.0	2.20	2091	0.00	1.00	2.20	A	3.3	11

DIR	STREET	DELAY	LOS
WB	HAYWARD ST	20.26	C
NB	WASHINGTON ST	2.20	A

INTERSECTION DELAY = 5.24 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

AVERY ST/HAYWARD ST/WASHINGTON ST
1995 BUILD PM PEAK WITH EXISTING NETWORK]
Date. 04-10-1989 Time 16.30.08

1985 HCM - CHAPTER 9 SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=8PM GEOMETRICS=8PM SIGNAL=8PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	AVERY ST	0	0	0	0	0	0	0	0.0	0.0	0.0	22
WB	HAYWARD ST	0	339	11	350	0	2	0	0.0	12.0	0.0	24
NB	WASHINGTON ST	720	0	0	720	2	0	0	12.0	0.0	0.0	36
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	0

TOTAL VOLUME = 1070

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	0.0%	N	5	0	.000	200	Y	12.5	3
WB	0.0%	2.0%	N	0	0	.900	200	Y	12.5	3
NB	0.0%	2.0%	Y	10	0	.900	200	Y	12.0	3
SB	0.0%	0.0%	N	0	0	.000	200	Y	12.0	0

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1						*	*					*					21.1	4	A
2								*	*								50.9	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	0	339	11	.900	0	377	12
NB	720	0	0	.900	800	0	0
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
WB	TH-RT	389	2	1.05	408	0.00	0.03
NB	LT	800	2	1.05	840	1.00	0.00

AVERY ST/HAYWARD ST/WASHINGTON ST

1995 BUILD PM PEAK WITH EXISTING NETWORK]

date 04-10-1989 time. 16:30:09

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	TH-RT	1800	2	1.000	0.990	1.000	1.000	1.000	0.900	0.995	1.000	3193
NB	LT	1800	2	1.000	0.990	1.000	0.925	1.000	0.900	1.000	0.920	2728

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	TH-RT	408	3193	0.13	0.26	843	0.48	*
NB	LT	840	2728	0.31	0.64	1735	0.48	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.44 TOTAL V/C= 0.48

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CR	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	TH-RT	0.48	*	0.26	80.0	18.88	843	0.00	0.85	16.04	C	6.4	20
NB	LT	0.48	*	0.64	80.0	5.82	1735	0.00	1.00	5.82	B	6.5	20

DIR	STREET	DELAY	LOS
WB	HAYWARD ST	16.04	C
NB	WASHINGTON ST	5.82	B

INTERSECTION DELAY = 9.17 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

HARRISON AVE/STUART ST/KNEELAND ST

1995 BUILD AM PEAK EXISTING NETWORK

Date 04-10-1989 Time 16:38:40

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=11AM GEOMETRICS=11AM SIGNAL=11AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

DIR	STREET	VOLUMES LT	TH	RT	TOTAL	# OF LANES LT	TH	RT	LANE WIDTH LT	TH	RT	CROSS WALK
EB	STUART ST	0	768	80	848	0	2	1	0.0	11.0	11.0	60
WB	KNEELAND ST	76	949	0	1025	0	3	0	0.0	11.0	0.0	60
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	26
SB	HARRISON AVE	137	128	153	418	0	1	0	0.0	12.0	0.0	26

TOTAL VOLUME = 2291

TRAFFIC & ROADWAY CONDITIONS

DIR	GRADE	%HV	ADJ PARK Y/N	MOVES	BUSES	PHF	PEDESTRIANS CROSS	BUT	MIN TIME	ARR TYPE
EB	0.0%	2.0%	Y	10	10	.960	200	Y	18.0	3
WB	0.0%	2.0%	Y	10	10	.960	200	Y	18.0	3
NB	.0%	0.0%	N	0	0	.000	0		9.5	0
SB	0.0%	2.0%	Y	5	5	.960	200	Y	9.5	3

PHASINGS

	EASTBOUND l	t	r	p	WESTBOUND l	t	r	p	NORTHBOUND l	t	r	p	SOUTHBOUND l	t	r	p	GREEN	Y+R	PRE/ACT
1		*	*		*	*						*				*	31.8	4	A
2				*				*					*	*	*		40.2	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	768	80	.960	0	800	83
WB	76	949	0	.960	79	989	0
NB	0	0	0	.000	0	0	0
SB	137	128	153	.960	143	133	159

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
EB	TH	800	2	1.05	840	0.00	0.00
EB	RT	83	1	1.00	83	0.00	1.00
WB	LT-TH	1068	3	1.10	1174	0.07	0.00
SB	LT-TH-RT	435	1	1.00	435	0.33	0.37

HARRISON AVE/STUART ST/KNEELAND ST
1995 BUILD AM PEAK EXISTING NETWORK
date. 04-10-1989 time 16.38 41

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH	1600	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	2756
EB	RT	1600	1	0.967	0.990	1.000	0.849	0.958	0.900	0.850	1.000	953
WB	LT-TH	1600	3	0.967	0.990	1.000	0.950	0.986	0.900	1.000	0.814	3154
SB	LT-TH-RT	1800	1	1.000	0.990	1.000	0.875	0.979	0.900	0.816	0.825	924

SUPPLEMENTAL WORKSHEET FOR
LEFT-TURN ADJUSTMENT FACTOR FLT
INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	No	Vo	Plto	LGo
WB	90	32	3	1068	1068	79	0.07	2	800	0.00	0

CALCULATIONS

DIR	Sop	Yo	Gu	Fs	Pl	Ga	Pt	Gf	El	Fm	Flt
WB	3600	0.222	18.009	0.375	0.493	13.776	0.507	2.038	3.000	0.443	0.814

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH	840	2756	0.30	0.40	1095	0.77	
EB	RT	83	953	0.09	0.40	379	0.22	
WB	LT-TH	1174	3154	0.37	0.40	1253	0.94	*
SB	LT-TH-RT	435	924	0.47	0.50	464	0.94	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.84 TOTAL V/C= 0.94

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH	0.77		0.40	80.0	15.88	1095	2.80	0.85	15.88	C	10.7	33
EB	RT	0.22		0.40	80.0	12.10	379	0.00	0.85	10.29	B	1.1	4
WB	LT-TH	0.94	*	0.40	80.0	17.60	1253	10.42	0.85	23.81	C	16.3	50
SB	LT-TH-RT	0.94	*	0.50	80.0	14.22	464	21.13	0.85	30.05	D	7.1	22

DIR	STREET	DELAY	LOS
EB	STUART ST	15.37	C
WB	KNEELAND ST	23.81	C
SB	HARRISON AVE	30.05	D

INTERSECTION DELAY = 21.81 INTERSECTION LOS=C

THE EXISTING TIMING IS OPTIMAL

HARRISON AVE/STUART ST/KNEELAND ST
1995 BUILD PM PEAK WITH EXISTING NETWORK]
Date 04-10-1989 Time. 16.43 54

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=11PM GEOMETRICS=11PM SIGNAL=11PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	STAURT ST	0	885	79	964	0	2	1	0.0	11.0	11.0	60
WB	KNEELAND ST	84	956	0	1040	0	3	0	0.0	11.0	0.0	60
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	26
SB	HARRISON AVE	419	248	193	860	0	1	0	0.0	12.0	0.0	26

TOTAL VOLUME = 2864

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	Y	10	10	.950	200	Y	18.0	3
WB	0.0%	2.0%	Y	10	10	.950	200	Y	18.0	3
NB	0.0%	0.0%	N	0	0	.000	0		9.5	0
SB	0.0%	2.0%	Y	5	5	.950	200	Y	9.5	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1		*	*		*	*						*				*	21.6	4	A
2				*				*					*	*	*		50.4	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	885	79	.950	0	932	83
WB	84	956	0	.950	88	1006	0
NB	0	0	0	.000	0	0	0
SB	419	248	193	.950	441	261	203

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
EB	TH	932	2	1.05	978	0.00	0.00
EB	RT	83	1	1.00	83	0.00	1.00
WB	LT-TH	1095	3	1.10	1204	0.08	0.00
SB	LT-TH-RT	905	1	1.00	905	0.49	0.22

HARRISON AVE/STUART ST/KNEELAND ST

1995 BUILD PM PEAK WITH EXISTING NETWORK]

date 04-10-1989 time 16.43.55

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH	1600	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	2756
EB	RT	1600	1	0.967	0.990	1.000	0.649	0.958	0.900	0.850	1.000	953
WB	LT-TH	1600	3	0.967	0.990	1.000	0.950	0.986	0.900	1.000	0.736	2849
SB	LT-TH-RT	1800	1	1.000	0.990	1.000	0.875	0.979	0.900	0.848	0.788	918

SUPPLEMENTAL WORKSHEET FOR

LEFT-TURN ADJUSTMENT FACTOR FLT

INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	No	Vo	Pltc	LGo
WB	80	22	3	1095	1095	88	0.08	2	932	0.00	0

CALCULATIONS

DIR	Sop	Yo	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
WB	3600	0.259	1.219	0.293	0.799	20.386	0.201	0.502	3.843	0.207	0.736

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH	978	2756	0.35	0.27	744	1.31	
EB	RT	83	953	0.09	0.27	257	0.32	
WB	LT-TH	1204	2849	0.42	0.27	769	1.57	*
SB	LT-TH-RT	905	918	0.99	0.63	578	1.57	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 1.41 TOTAL V/C= 1.57

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH	1.31		0.27	80.0	25.11	744	117.55	0.85	121.26	F	48.3	146
EB	RT	0.32		0.27	80.0	17.75	257	0.00	0.85	15.06	C	1.3	5
WB	LT-TH	1.57	*	0.27	80.0	28.06	769	202.17	0.85	195.70	F	86.2	259
SB	LT-TH-RT	1.57	*	0.63	80.0	301.90	578	204.32	0.85	430.29	F	144.4	434

DIR	STREET	DELAY	LOS
EB	STAURT ST	112.94	F
WB	KNEELAND ST	195.70	F
SB	HARRISON AVE	430.29	F

INTERSECTION DELAY =234.97 INTERSECTION LOS=F

THE EXISTING TIMING IS OPTIMAL

[CHAUNCY ST/AVE DE LAFAYETTE]
[1995 BUILD AM PEAK EXISTING NETWORK]

Date 04-10-1989 Time: 16.46.52

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=15AM GEOMETRICS=15AM SIGNAL=

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	AVE DE LAFAYETTE	0	0	0	0	0	0	0	0.0	0.0	0.0	0
WB	AVE DE LAFAYETTE	0	22	13	35	0	2	0	0.0	11.0	0.0	44
NB	CHAUNCY ST	276	501	0	777	1	1	0	11.0	10.0	0.0	40
SB	CHAUNCY ST	0	0	399	399	0	0	1	0.0	0.0	14.0	36

TOTAL VOLUME = 1211

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.000	15		11.0	3
WB	0.0%	2.0%	Y	10	10	.900	180	N	11.0	3
NB	0.0%	2.0%	Y	10	20	.900	100	N	13.0	3
SB	0.0%	2.0%	N	0	25	.900	310	N	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1								*				*			*		28.5	3	A
2						*	*					*				*	1.4	3	A
3				*				*	*	*							40.1	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	0	22	13	.900	0	24	14
NB	276	501	0	.900	307	557	0
SB	0	0	399	.900	0	0	443

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
WB	TH-RT	39	2	1.05	41	0.00	0.37
NB	LT	307	1	1.00	307	1.00	0.00
NB	TH	557	1	1.00	557	0.00	0.00
SB	RT	443	1	1.00	443	0.00	1.00

[CHAUNCY ST/AVE DE LAFAYETTE]
[1995 BUILD AM PEAK EXISTING NETWORK]
date 04-10-1989 time 16:48:53

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	TH-RT	1800	2	0.967	0.990	1.000	0.925	0.979	0.900	0.889	1.000	2497
NB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1473
NB	TH	1800	1	0.933	0.990	1.000	0.849	0.917	0.900	1.000	1.000	1165
SB	RT	1800	1	1.067	0.990	1.000	1.000	0.896	0.900	0.850	1.000	1303

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	TH-RT	41	2497	0.02	0.02	43	0.95	*
NB	LT	307	1473	0.21	0.50	738	0.42	
NB	TH	557	1165	0.48	0.50	584	0.95	*
SB	RT	443	1303	0.34	0.36	465	0.95	*

CYCLE= 80.0 LOST=10.0 SUM V/S CRIT= 0.83 TOTAL V/C= 0.95

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CN	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	TH-RT	0.95	*	0.02	80.0	29.85	43	93.04	0.85	104.45	F	1.9	7
NB	LT	0.42		0.50	80.0	9.56	738	0.00	1.00	9.56	B	3.4	11
NB	TH	0.95	*	0.50	80.0	14.49	584	20.42	0.85	29.68	D	9.1	28
SB	RT	0.95	*	0.36	80.0	19.06	465	23.59	0.85	36.25	D	9.0	28

DIR	STREET	DELAY	LOS
WB	AVE DE LAFAYETTE	104.45	F
NB	CHAUNCY ST	22.53	C
SB	CHAUNCY ST	36.25	D

INTERSECTION DELAY = 29.53 INTERSECTION LOS=D

THE EXISTING TIMING IS OPTIMAL

CHAUNCY ST/AVE DE LAFAYETTE

1995 BUILD PM PEAK WITH EXISTING NETWORK

Date. 04-10-1989 Time 16.51 23

1985 HCM - CHAPTER 9 SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=15PM GEOMETRICS=15PM SIGNAL=15PM

LOCATED IN CSD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	AVE DE LAFAYETTE	0	0	0	0	0	0	0	0.0	0.0	0.0	0
WB	AVE DE LAFAYETTE	0	63	31	94	0	2	0	0.0	11.0	0.0	44
NB	CHAUNCY ST	141	411	0	552	1	1	0	11.0	10.0	0.0	40
SB	CHAUNCY ST	0	0	376	376	0	0	1	0.0	0.0	14.0	36

TOTAL VOLUME = 1022

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK			PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.000	15		11.0	3
WB	0.0%	2.0%	Y	10	10	.900	180	N	11.0	3
NB	0.0%	2.0%	Y	10	20	.900	100	N	13.0	3
SB	0.0%	2.0%	N	0	25	.900	310	N	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1								*				*			*		29.7	3	A
2						*	*					*				*	4.0	3	A
3				*				*	*	*							36.3	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	0	63	31	.900	0	70	34
NB	141	411	0	.900	157	457	0
SB	0	0	376	.900	0	0	418

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
WB	TH-RT	104	2	1.05	110	0.00	0.33
NB	LT	157	1	1.00	157	1.00	0.00
NB	TH	457	1	1.00	457	0.00	0.00
SB	RT	418	1	1.00	418	0.00	1.00

CHAUNCY ST/AVE DE LAFAYETTE

1995 BUILD PM PEAK WITH EXISTING NETWORK

date 04-10-1989 time: 16.51:24

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	TH-RT	1800	2	0.967	0.990	1.000	0.925	0.979	0.900	0.902	1.000	2532
NB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1473
NB	TH	1800	1	0.933	0.990	1.000	0.849	0.917	0.900	1.000	1.000	1165
SB	RT	1800	1	1.067	0.990	1.000	1.000	0.896	0.900	0.850	1.000	1303

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	TH-RT	110	2532	0.04	0.05	127	0.86	*
NB	LT	157	1473	0.11	0.45	668	0.23	
NB	TH	457	1165	0.39	0.45	529	0.86	*
SB	RT	418	1303	0.32	0.37	484	0.86	*

CYCLE= 80.0 LOST=10.0 SUM V/S CRIT= 0.76 TOTAL V/C= 0.86

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	TH-RT	0.86	*	0.05	80.0	26.67	127	33.91	0.85	53.19	E	3.1	10
NB	LT	0.23		0.45	80.0	10.15	668	0.00	1.00	10.15	B	1.9	7
NB	TH	0.86	*	0.45	80.0	14.92	529	11.30	0.85	22.29	C	6.4	20
SB	RT	0.86	*	0.37	80.0	17.70	484	12.17	0.85	25.36	D	6.7	21

DIR	STREET	DELAY	LOS
WB	AVE DE LAFAYETTE	53.19	E
NB	CHAUNCY ST	19.19	C
SB	CHAUNCY ST	25.38	D

INTERSECTION DELAY = 24.73 INTERSECTION LOS=C

THE EXISTING TIMING IS OPTIMAL

CHAUNCY ST/AVE DE LAFAYETTE

1995 BUILD SAT PEAK WITH EXISTING NETWORK

Date: 04-10-1989 Time. 16:53:35

1985 HCM - CHAPTER 9. SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=15SAT GEOMETRICS=15SAT SIGNAL=15SAT

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	AVE DE LAFAYETTE	0	0	0	0	0	0	0	0.0	0.0	0.0	0
WB	AVE DE LAFAYETTE	0	83	8	91	0	2	0	0.0	11.0	0.0	44
NB	CHAUNCY ST	141	378	0	519	1	1	0	11.0	10.0	0.0	40
SB	CHAUNCY ST	0	0	346	346	0	0	1	0.0	0.0	14.0	36

TOTAL VOLUME = 956

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.000	15		11.0	3
WB	0.0%	2.0%	Y	10	10	.900	180	N	11.0	3
NB	0.0%	2.0%	Y	10	20	.900	100	N	13.0	3
SB	0.0%	2.0%	N	0	25	.900	310	N	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1								*				*			*		29.7	3	A
2						*	*					*				*	3.9	3	A
3			*					*	*	*							36.3	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFF	THFF	RTFF
EB	.	0	0	.000	0	0	0
WB	0	83	8	.900	0	92	9
NB	141	378	0	.900	157	420	0
SB	0	0	346	.900	0	0	384

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	V	P1t	Prt
WB	TH-RT	101	2	1.05	106	0.00	0.09
NB	LT	157	1	1.00	157	1.00	0.00
NB	TH	420	1	1.00	420	0.00	0.00
SB	RT	384	1	1.00	384	0.00	1.00

CHAUNCY ST/AVE DE LAFAYETTE

1995 BUILD SAT PEAK WITH EXISTING NETWORK

date: 04-10-1989 time: 16:53.36

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
NB	TH-RT	1800	2	0.967	0.990	1.000	0.925	0.979	0.900	0.974	1.000	2734
NB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1473
NB	TH	1800	1	0.933	0.990	1.000	0.849	0.917	0.900	1.000	1.000	1165
SB	RT	1800	1	1.067	0.990	1.000	1.000	0.896	0.900	0.850	1.000	1303

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
NB	TH-RT	106	2734	0.04	0.05	134	0.79	*
NB	LT	157	1473	0.11	0.45	669	0.23	
NB	TH	420	1165	0.36	0.45	529	0.79	*
SB	RT	384	1303	0.30	0.37	484	0.79	*

CYCLE= 80.0 LOST=10.0 SUM V/S CRIT= 0.69 TOTAL V/C= 0.79

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CN	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
NB	TH-RT	0.79	*	0.05	80.0	28.61	134	22.41	0.85	43.36	E	2.7	9
NB	LT	0.23		0.45	80.0	10.13	669	0.00	1.00	10.13	B	1.9	7
NB	TH	0.79	*	0.45	80.0	14.16	529	6.80	0.85	17.81	C	5.2	17
SB	RT	0.79	*	0.37	80.0	17.02	484	7.37	0.85	20.73	C	5.6	15

DIR	STREET	DELAY	LOS
NB	AVE DE LAFAYETTE	43.36	E
NB	CHAUNCY ST	15.73	C
SB	CHAUNCY ST	20.73	C

INTERSECTION DELAY = 20.28 INTERSECTION LOS=C

THE EXISTING TIMING IS OPTIMAL

SUMMER ST/ARCH ST/CHAUNCY ST

1995 BUILD AM PEAK WITH EXISTING NETWORK

Date 04-10-1989 Time. 16.53 52

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=17AM GEOMETRICS=17AM SIGNAL=17AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	SUMMER ST	21	47	0	68	0	1	0	0.0	10.0	0.0	30
WB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
NB	CHAUNCY ST	0	331	85	416	0	1	0	0.0	10.0	0.0	30
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	0

TOTAL VOLUME = 484

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK.			PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	Y	5	0	.960	300	Y	10.5	3
WB	0.0%	0.0%	N	0	0	.000	300	Y	10.5	0
NB	0.0%	2.0%	Y	5	0	.960	400	Y	10.5	3
SB	0.0%	0.0%	N	0	0	.000	400	Y	10.5	0

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1				*				*		*	*						44.4	4	A
2	*	*										*				*	7.6	4	A

C CLE= 60.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	21	47	0	.960	22	49	0
WB	0	0	0	.000	0	0	0
NB	0	331	85	.960	0	345	89
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	V	P1t	Prt
EB	LT-TH	71	1	1.00	71	0.31	0.00
NB	TH-RT	433	1	1.00	433	0.00	0.20

SUMMER ST/ARCH ST/CHAUNCY ST

1995 BUILD AM PEAK WITH EXISTING NETWORK

date 04-10-1989 time: 16 55:53

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH	1800	1	0.933	0.990	1.000	0.875	1.000	0.900	1.000	0.799	1047
NB	TH-RT	1800	1	0.933	0.990	1.000	0.875	1.000	0.900	0.843	1.000	1104

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH	71	1047	0.07	0.13	133	0.53	*
NB	TH-RT	433	1104	0.39	0.74	816	0.53	*

CYCLE= 60.0 LOST= 8.0 SUM V/S CRIT= 0.46 TOTAL V/C= 0.53

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH	0.53	*	0.13	60.0	18.62	133	1.36	0.85	16.98	C	1.0	4
NB	TH-RT	0.53	*	0.74	60.0	2.55	816	0.22	0.85	2.36	A	1.9	7

DIR	STREET	DELAY	LOS
EB	SUMMER ST	16.98	C
NB	CHAUNCY ST	2.36	A

INTERSECTION DELAY = 4.41 INTERSECTION LOS=A

THE EXISTING TIMING IS OPTIMAL

SUMMER ST/ARCH ST/CHAUNCY ST

1995 BUILD PM PEAK WITH EXISTING NETWORK

Date 04-10-1989 Time 16:58.26

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=17PM GEOMETRICS=17PM SIGNAL=17PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	SUMMER ST	46	96	0	142	0	1	0	0.0	10.0	0.0	30
WB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
NB	CHAUNCY ST	0	359	199	558	0	1	0	0.0	10.0	0.0	30
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	0

TOTAL VOLUME = 700

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	Y	5	0	.860	375	Y	10.5	3
WB	0.0%	0.0%	N	0	0	.000	375	Y	10.5	0
NB	0.0%	2.0%	Y	5	0	.860	500	Y	10.5	3
SB	0.0%	0.0%	N	0	0	.000	500	Y	10.5	0

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1				*				*		*	*						41.4	4	A
2	*	*										*				*	10.6	4	A

CYCLE= 60.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	46	96	0	.860	53	112	0
WB	0	0	0	.000	0	0	0
NB	0	359	199	.860	0	417	231
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
EB	LT-TH	165	1	1.00	165	0.32	0.00
NB	TH-RT	649	1	1.00	649	0.00	0.36

SUMMER ST/ARCH ST/CHAUNCY ST

1995 BUILD PM PEAK WITH EXISTING NETWORK

date 04-10-1989 time 16:58:27

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH	1800	1	0.933	0.990	1.000	0.875	1.000	0.900	1.000	0.779	1020
NB	TH-RT	1800	1	0.933	0.990	1.000	0.875	1.000	0.900	0.788	1.000	1032

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH	165	1020	0.16	0.18	181	0.91	*
NB	TH-RT	649	1032	0.63	0.69	711	0.91	*

CYCLE= 60.0 LOST= 8.0 SUM V/S CRIT= 0.79 TOTAL V/C= 0.91

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH	0.91	*	0.18	60.0	18.41	181	33.95	0.85	44.50	E	3.8	12
NB	TH-RT	0.91	*	0.69	60.0	5.93	711	12.86	0.85	15.97	C	5.4	17

DIR	STREET	DELAY	LOS
EB	SUMMER ST	44.50	E
NB	CHAUNCY ST	15.97	C

INTERSECTION DELAY = 21.76 INTERSECTION LOS=C

THE EXISTING TIMING IS OPTIMAL

SUMMER ST/ARCH ST/CHAUNCY ST

1995 BUILD SAT PEAK WITH EXISTING NETWORK

Date 04-10-1989 Time: 17:00:18

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=17SAT GEOMETRICS=17SAT SIGNAL=17SAT

LOCATED IN CBD.Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	SUMMER ST	61	126	0	187	0	1	0	0.0	10.0	0.0	30
WB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
NB	CHAUNCY ST	0	272	144	416	0	1	0	0.0	10.0	0.0	30
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	0

TOTAL VOLUME = 603

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	0.0%	Y	5	0	.910	375	Y	10.5	3
WB	0.0%	0.0%	N	0	0	.000	375	Y	10.5	0
NB	0.0%	0.0%		5	0	.910	500	Y	10.5	3
SB	0.0%	0.0%	N	0	0	.000	500	Y	10.5	0

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1				*				*		*	*						35.7	4	A
2	*	*										*				*	16.3	4	A

CYCLE= 60.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	61	126	0	.910	67	138	0
WB	0	0	0	.000	0	0	0
NB	0	272	144	.910	0	299	158
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
EB	LT-TH	205	1	1.00	205	0.33	0.00
NB	TH-RT	457	1	1.00	457	0.00	0.35

SUMMER ST/ARCH ST/CHAUNCY ST

1995 BUILD SAT PEAK WITH EXISTING NETWORK

date: 04-10-1989 time: 17:00:17

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH	1800	1	0.933	0.990	1.000	0.875	1.000	0.900	1.000	0.778	1019
NB	TH-RT	1800	1	0.933	0.990	1.000	0.875	1.000	0.900	0.791	1.000	1036

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH	205	1019	0.20	0.27	277	0.74	*
NB	TH-RT	457	1036	0.44	0.59	616	0.74	*

CYCLE= 60.0 LOST= 8.0 SUM V/S CRIT= 0.64 TOTAL V/C= 0.74

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH	0.74	*	0.27	60.0	15.14	277	8.54	0.85	20.13	C	2.7	9
NB	TH-RT	0.74	*	0.59	60.0	6.70	616	4.02	0.85	9.12	B	3.1	10

DIR	STREET	DELAY	LOS
EB	SUMMER ST	20.13	C
NB	CHAUNCY ST	9.12	B

INTERSECTION DELAY = 12.53 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

OTIS ST/KINGSTON ST/SUMMER ST

1995 BUILD AM PEAK WITH EXISTING NETWORK

Date 04-10-1989 Time 17:03:00

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=20AM GEOMETRICS=20AM SIGNAL=20AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	SUMMER ST	0	74	57	131	0	1	1	0.0	10.0	10.0	25
WB	SUMMER ST	261	0	0	261	1	0	0	10.0	0.0	0.0	32
NB	KINGSTON ST	0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	OTIS ST	56	189	0	245	1	1	0	10.0	10.0	0.0	25

TOTAL VOLUME = 637

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	Y	10	0	.880	400	N	11.0	3
WB	0.0%	2.0%	N	0	0	.880	400	N	11.0	3
NB	0.0%	0.0%	N	0	0	.000	[illegible]		9.3	3
SB	[illegible]	2.0%	N	0	0	.880	400	N	9.3	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1		*	*		*							*				*	45.8	4	A
2				*				*					*	*			26.2	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	74	57	.880	0	84	65
WB	261	0	0	.880	297	0	0
NB	0	0	0	.000	0	0	0
SB	56	189	0	.880	64	215	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GRDUP	FLOW	N	LU	v	P1t	Prt
EB	TH	84	1	1.00	84	0.00	0.00
EB	RT	65	1	1.00	65	0.00	1.00
WB	LT	297	1	1.00	297	1.00	0.00
SB	LT	64	1	1.00	64	1.00	0.00
SB	TH	215	1	1.00	215	0.00	0.00

OTIS ST/KINGSTON ST/SUMMER ST

1995 BUILD AM PEAK WITH EXISTING NETWORK

date. 04-10-1989 time 17:03:01

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH	1800	1	0.933	0.990	1.000	1.000	1.000	0.900	1.000	1.000	1497
EB	RT	1800	1	0.933	0.990	1.000	0.849	1.000	0.900	0.850	1.000	1080
WB	LT	1800	1	0.933	0.990	1.000	1.000	1.000	0.900	1.000	0.792	1185
SB	LT	1800	1	0.933	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1422
SB	TH	1800	1	0.933	0.990	1.000	1.000	1.000	0.900	1.000	1.000	1497

SUPPLEMENTAL WORKSHEET FOR

LEFT-TURN ADJUSTMENT FACTOR FLT

INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	No	Vo	Plto	LGo
WB	80	46	1	297	0	297	1.00	1	84	0.00	0

CALCULATIONS

DIR	Sop	Yo	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
WB	1800	0.047	44.083	0.822	1.000	1.678	0.000	0.000	1.368	0.792	0.792

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH	84	1497	0.06	0.57	856	0.10	
EB	RT	65	1080	0.06	0.57	618	0.10	
WB	LT	297	1185	0.25	0.57	678	0.44	*
SB	LT	64	1422	0.04	0.33	466	0.14	
SB	TH	215	1497	0.14	0.33	491	0.44	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.39 TOTAL V/C= 0.44

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH	0.10		0.57	80.0	5.90	856	0.00	0.85	5.01	B	0.8	3
EB	RT	0.10		0.57	80.0	5.92	618	0.00	0.85	5.04	B	0.6	3
WB	LT	0.44	*	0.57	80.0	7.43	678	0.00	0.85	6.31	B	2.8	9
SB	LT	0.14		0.33	80.0	14.37	466	0.00	1.00	14.37	B	1.0	4
SB	TH	0.44	*	0.33	80.0	16.03	491	0.00	0.85	13.62	B	3.2	11

DIR	STREET	DELAY	LOS
EB	SUMMER ST	5.02	B
WB	SUMMER ST	6.31	B
SB	OTIS ST	13.79	B

INTERSECTION DELAY = 8.93 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

OTIS ST/KINGSTON ST/SUMMER ST

1995 BUILD PM PEAK WITH EXISTING NETWORK

Date 04-10-1989 Time 17.06.26

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=20PM GEOMETRICS=20PM SIGNAL=

LOCATED IN CBD.Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	SUMMER ST	0	205	91	296	0	1	1	0.0	10.0	10.0	25
WE	SUMMER ST	182	0	0	182	1	0	0	10.0	0.0	0.0	32
NB	KINGSTON ST	0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	OTIS ST	95	379	0	474	1	1	0	10.0	10.0	0.0	25

TOTAL VOLUME = 952

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK			PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	0.0%	Y	10	0	.980	400	N	11.0	3
WE	0.0%	0.0%	N	0	0	.980	400	N	11.0	3
NB	0.0%	0.0%	N	0	0	.000	0		9.3	3
SB	0.0%	0.0%	N	0	0	.980	100	N	9.3	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1		*	*		*							*				*	30.5	4	A
2				*				*					*	*			41.5	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	205	91	.980	0	209	93
WE	182	0	0	.980	186	0	0
NB	0	0	0	.000	0	0	0
SB	95	379	0	.980	97	387	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
EB	TH	209	1	1.00	209	0.00	0.00
EB	RT	93	1	1.00	93	0.00	1.00
WE	LT	186	1	1.00	186	1.00	0.00
SB	LT	97	1	1.00	97	1.00	0.00
SB	TH	387	1	1.00	387	0.00	0.00

OTIS ST/KINGSTON ST/SUMMER ST

1995 BUILD PM PEAK WITH EXISTING NETWORK

date 04-10-1989 time: 17:06.29

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH	1800	1	0.933	0.990	1.000	1.000	1.000	0.900	1.000	1.000	1497
EB	RT	1800	1	0.933	0.990	1.000	0.849	1.000	0.900	0.850	1.000	1080
WB	LT	1800	1	0.933	0.990	1.000	1.000	1.000	0.900	1.000	0.652	976
SB	LT	1800	1	0.933	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1422
SB	TH	1800	1	0.933	0.990	1.000	1.000	1.000	0.900	1.000	1.000	1497

SUPPLEMENTAL WORKSHEET FOR

LEFT-TURN ADJUSTMENT FACTOR FLT

INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	No	Vo	Plto	LGo
WB	80	31	1	186	0	186	1.00	1	209	0.00	0

CALCULATIONS

DIR	Sop	Yo	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
WB	1800	0.116	24.042	0.744	1.000	6.503	0.000	0.000	1.512	0.652	0.652

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH	209	1497	0.14	0.38	572	0.37	
EB	RT	93	1080	0.09	0.38	412	0.23	
WB	LT	186	976	0.19	0.38	372	0.50	*
EB	LT	97	1422	0.07	0.52	737	0.13	
SB	TH	387	1497	0.26	0.52	776	0.50	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.45 TOTAL V/C= 0.50

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH	0.37		0.38	80.0	13.50	572	0.00	0.85	11.48	B	2.9	10
EB	RT	0.23		0.38	80.0	12.71	412	0.00	0.85	10.80	B	1.3	5
WB	LT	0.50	*	0.38	80.0	14.35	372	0.00	0.85	12.20	B	2.6	9
SB	LT	0.13		0.52	80.0	7.57	737	0.00	1.00	7.57	B	1.0	4
SB	TH	0.50	*	0.52	80.0	9.52	776	0.00	0.85	8.09	B	4.1	13

DIR	STREET	DELAY	LOS
EB	SUMMER ST	11.27	B
WB	SUMMER ST	12.20	B
SB	OTIS ST	7.99	B

INTERSECTION DELAY = 9.81 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

ESSEX ST/SURFACE ARTERY/LINCOLN ST

1995 BUILD AM PEAK EXISTING NETWORK

Date 04-10-1989 Time 17.10.25

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=21AM GEOMETRICS=21AM SIGNAL=21AM

LOCATED IN CBD.Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	ESSEX ST	131	663	82	876	0	3	0	0.0	12.0	0.0	52
WB	LINCOLN ST	72	1534	33	1639	0	3	0	0.0	12.0	0.0	30
NB	SURFACE ARTERY	90	522	19	631	0	3	0	0.0	11.0	0.0	56
SB	SURFACE ARTERY	74	809	79	962	0	3	0	0.0	12.0	0.0	66

TOTAL VOLUME = 4108

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.870	30	Y	16.0	3
WB	0.0%	2.0%	N	10	10	.870	200	Y	16.0	3
NB	0.0%	2.0%	N	0	20	.870	90	Y	15.5	3
SB	0.0%	2.0%	N	0	25	.870	380	Y	15.5	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*	*	*									*				*	19.6	4	A
2				*				*	*	*	*		*	*	*		27.6	4	A
3				*				*	*	*	*						0.0	4	A
4					*	*	*					*				*	34.8	4	A

CYCLE= 98.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFF	THFF	RTFF
EB	131	663	82	.870	151	762	94
WB	72	1534	33	.870	83	1763	38
NB	90	522	19	.870	103	600	22
SB	74	809	79	.870	85	930	91

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
EB	LT-TH-RT	1007	3	1.10	1108	0.15	0.09
WB	LT-TH-RT	1884	3	1.10	2072	0.04	0.02
NB	LT-TH-RT	725	3	1.10	798	0.14	0.33
SB	LT-TH-RT	1106	3	1.10	1216	0.08	0.08

ESSEX ST/SURFACE ARTERY/LINCOLN ST
1995 BUILD AM PEAK EXISTING NETWORK
date. 04-10-1989 time. 17:10:26

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH-RT	1800	3	1.000	0.990	1.000	1.000	0.986	0.900	0.982	0.951	4429
WB	LT-TH-RT	1800	3	1.000	0.990	1.000	1.000	0.986	0.900	0.993	0.992	4673
NB	LT-TH-RT	1800	3	0.967	0.990	1.000	1.000	0.972	0.900	0.993	0.742	3332
SB	LT-TH-RT	1800	3	1.000	0.990	1.000	1.000	0.965	0.900	0.987	0.755	3458

SUPPLEMENTAL WORKSHEET FOR
LEFT-TURN ADJUSTMENT FACTOR FLT
INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	No	Vo	Plto	LGo
EB	98	28	3	1106	1106	85	0.08	3	725	0.14	0

CALCULATIONS

DIR	Soc	Yo	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
EB	3122	0.232	6.278	0.422	0.671	21.311	0.329	0.982	2.668	0.264	0.755

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH-RT	1108	4429	0.25	0.20	887	1.25	*
WB	LT-TH-RT	2072	4673	0.44	0.35	1659	1.25	*
NB	LT-TH-RT	798	3332	0.24	0.28	938	0.85	
SB	LT-TH-RT	1216	3458	0.35	0.28	974	1.25	*

CYCLE= 98.0 LOST=16.0 SUM V/S CRIT= 1.05 TOTAL V/C= 1.25

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CR	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH-RT	1.25	*	0.20	98.0	31.76	887	94.72	0.85	107.51	F	50.1	
WB	LT-TH-RT	1.25	*	0.35	98.0	27.84	1659	90.93	0.85	100.95	F	85.2	
NB	LT-TH-RT	0.85		0.28	98.0	25.28	938	6.18	0.85	26.73	D	14.2	
SB	LT-TH-RT	1.25	*	0.28	98.0	29.65	974	94.13	0.85	105.21	F	52.8	

DIR	STREET	DELAY	LOS
EB	ESSEX ST	107.51	F
WB	LINCOLN ST	100.95	F
NB	SURFACE ARTERY	26.73	D
SB	SURFACE ARTERY	105.21	F

INTERSECTION DELAY = 91.95 INTERSECTION LOS=F

THE EXISTING TIMING IS OPTIMAL

ESSEX ST/SURFACE ARTERY/LINCOLN ST
1995 BUILD PM PEAK WITH EXISTING NETWORK
Date. 04-10-1989 Time 17:13:14

1985 HCM - CHAPTER 9. SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=21PM GEOMETRICS=21PM SIGNAL=21PM

LOCATED IN CBD.Y

VOLUME & GEOMETRICS

DIR	STREET	VOLUMES LT	TH	RT	TOTAL	# OF LANES LT	TH	RT	LANE WIDTH LT	TH	RT	CROSS WALK
EB	ESSEX ST	153	999	266	1418	0	3	0	0.0	12.0	0.0	52
WB	LINCOLN ST	35	627	12	674	0	2	0	0.0	12.0	0.0	30
NB	SURFACE ARTERY	45	713	13	771	0	3	0	0.0	11.0	0.0	56
SB	SURFACE ARTERY	36	1340	21	1397	0	3	0	0.0	12.0	0.0	66

TOTAL VOLUME = 4260

TRAFFIC & ROADWAY CONDITIONS

DIR	GRADE	%HV	ADJ PARK Y/N	MOVES	BUSES	PHF	PEDESTRIANS CROSS	BUT	MIN TIME	ARR TYPE
EB	0.0%	2.0%	N	0	10	.940	15	Y	12.0	3
WB	0.0%	2.0%	Y	10	10	.940	180	Y	12.0	3
NB	0.0%	2.0%	N	0	20	.940	100	Y	15.5	3
SB	0.0%	2.0%	N	0	25	.940	310	Y	15.5	3

PHASINGS

	EASTBOUND l	t	r	p	WESTBOUND l	t	r	p	NORTHBOUND l	t	r	p	SOUTHBOUND l	t	r	p	GREEN	Y+R	PRE/ACT
1	*	*	*									*				*	32.2	4	A
2				*				*	*	*	*		*	*	*		25.5	4	A
3				*				*					*	*	*		1.6	4	A
					*	*	*					*				*	22.6	4	A

CYCLE= 98.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	153	999	266	.940	163	1063	283
WB	35	627	12	.940	37	667	13
NB	45	713	13	.940	48	759	14
SB	36	1340	21	.940	38	1426	22

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
EB	LT-TH-RT	1509	3	1.10	1659	0.11	0.19
WB	LT-TH-RT	717	2	1.05	753	0.05	0.02
NB	LT-TH-RT	820	3	1.10	902	0.06	0.02
SB	LT-TH-RT	1486	3	1.10	1635	0.03	0.02

ESSEX ST/SURFACE ARTERY/LINCOLN ST

1995 BUILD PM PEAK WITH EXISTING NETWORK

date 04-10-1989 time. 17:13.15

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH-RT	1800	3	1.000	0.990	1.000	1.000	0.986	0.900	0.963	0.968	4422
WB	LT-TH-RT	1800	2	1.000	0.990	1.000	0.925	0.979	0.900	0.995	0.990	2859
NB	LT-TH-RT	1800	3	0.967	0.990	1.000	1.000	0.972	0.900	0.996	0.722	3251
SB	LT-TH-RT	1800	3	1.000	0.990	1.000	1.000	0.965	0.900	0.998	0.974	4515

SUPPLEMENTAL WORKSHEET FOR

LEFT-TURN ADJUSTMENT FACTOR FLT

INPUT VARIABLES

DIR	G	C	N	Va	Vm	Vlt	Plt	Nc	Vo	Plto	LGo
NB	98	25	3	820	820	48	0.06	3	1399	0.03	0

CALCULATIONS

DIR	Sop	Yo	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
NB	5122	0.273	0.000	0.001	0.720	25.490	0.280	0.779	1800.000	0.165	0.722

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH-RT	1658	4422	0.38	0.33	1455	1.14	*
WB	LT-TH-RT	753	2859	0.26	0.23	660	1.14	*
NB	LT-TH-RT	902	3251	0.28	0.26	846	1.07	
SB	LT-TH-RT	1635	4515	0.36	0.32	1434	1.14	*

CYCLE= 98.0 LOST=12.0 SUM V/S CRIT= 1.00 TOTAL V/C= 1.14

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH-RT	1.14	*	0.33	98.0	26.83	1455	56.05	0.85	70.45	F	52.2	157
WB	LT-TH-RT	1.14	*	0.23	98.0	29.90	660	63.22	0.85	79.15	F	28.0	85
NB	LT-TH-RT	1.07		0.26	98.0	28.22	846	39.42	0.85	57.49	E	25.3	77
SB	LT-TH-RT	1.14	*	0.32	98.0	27.19	1434	56.15	0.85	70.83	F	51.8	156

DIR	STREET	DELAY	LOS
EB	ESSEX ST	70.45	F
WB	LINCOLN ST	79.15	F
NB	SURFACE ARTERY	57.49	E
SB	SURFACE ARTERY	70.83	F

INTERSECTION DELAY = 69.54 INTERSECTION LOS=F

THE EXISTING TIMING IS OPTIMAL

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:04-10-1989 TIME:17:32:05
HARRISON/BEACH 1989 BUILD AM PEAK REVISED NETWORK]?

LAST DATASETS LOADED OR SAVED
VOLUME=12AM GEOMETRICS=12AM
[illegible]

A- -B

C

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000 YES
CONTROLS: FROM C STOP
FROM D: YIELD
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 4 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: NO
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH C: WB BEACH
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH D: EB BEACH
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: NB HARRISON	B: SB HARRISON	C: WB BEACH	D: EB BEACH
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A: NB HARRISON			B: SB HARRISON			C: WB BEACH			D: EB BEACH		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	0	0	1	0	240	122	174	104	0	0	0	1
PHF	0.88			0.88			0.88			0.88		
ADJ VOLUME	0	0	1	0	273	139	198	118	0	0	0	1
PERCENT GRADE	0.00			0.00			0.00					
PASS CAP/HR	0			0			218	130	0	0	0	1

STEP 1 RIGHT TURNS FROM	C:WB BEACH	D:EB BEACH
CONFLICTING FLOWS	1	206
CRITICAL GAPS	5.0	4.5
CAPACITY	1199	1089
CAPACITY USED	0%	0%
IMPEDANCE FACTOR	1.00	1.00
ACTUAL CAPACITY	1199	1089

DATE.04-10-1989 TIME 17.32:05
HARRISON/BEACH 1995 BUILD AM PEAK REVISED NETWORK]?

STEP 2 LEFT TURNS FROM	B:SB HARRISON	A NB HARRISON
CONFLICTING FLOWS	1	411
CRITICAL GAPS	5.5	5.5
CAPACITY	1106	695
CAPACITY USED	0%	0%
IMPEDANCE FACTOR	1.00	1.00
ACTUAL CAPACITY	1106	695

STEP 3 THRU MOVES FROM	C:WB BEACH	D:EB BEACH
CONFLICTING FLOWS	412	343
CRITICAL GAPS	6.5	6.0
CAPACITY	552	675
CAPACITY USED	24%	0%
IMPEDANCE FACTOR	0.83	1.00
ACTUAL CAPACITY	552	675

STEP 4 LEFT TURNS FROM	C:WB BEACH	D:EB BEACH
CONFLICTING FLOWS	413	461
CRITICAL GAPS	7.0	6.5
CAPACITY	494	514
ACTUAL CAPACITY	494	426

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
ALL MOVES FROM C	348	514	167	D	21.61	2.09
ALL MOVES FROM D	1	1089	1088	A	3.31	0.00

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:04-10-1989 TIME:17:33:39
BEACH/HARRISON 1995 BUILD PM PEAK EXISTING NETWORK

LAST DATASETS LOADED OR SAVED
VOLUME=12PM GEOMETRICS=12PM
KEY: D

A- -B
:
C

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS FROM C: STOP
FROM D: YIELD
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 4 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: NO
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE NO

MINOR STREET LANES

APPROACH C WB BEACH
EXCLUSIVE LEFT TURN LANES NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH D EB BEACH
EXCLUSIVE LEFT TURN LANES NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A NB HARRISON	B: SB HARRISON	C: WB BEACH	D: EB BEACH
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A NB HARRISON			B SB HARRISON			C: WB BEACH			D: EB BEACH		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	0	0	1	0	619	106	229	124	0	0	0	1
PHF	1.92			0.92			0.92			0.92		
ADJ VOLUME	0	0	1	0	673	115	249	135	0	0	0	1
PERCENT GRADE	0.00			0.00			0.00					
BASE CAP/HR	0			0			274	148	0	0	0	1

STEP 1 RIGHT TURNS FROM	C.WB BEACH	D:EB BEACH
CONFLICTING FLOWS	1	394
CRITICAL GAPS	5.0	4.5
CAPACITY	1199	912
CAPACITY USED	0%	0%
IMPEDANCE FACTOR	1.00	1.00
ACTUAL CAPACITY	1199	912

1985 HCM - CHAPTER 10 UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:04-10-1989 TIME:17:33:39
BEACH/HARRISON 1995 BUILD PM PEAK EXISTING NETWORK

STEP 1 LEFT TURNS FROM	B:SB HARRISON	A:NB HARRISON
CONFLICTING FLOWS	1	788
CRITICAL GAPS	5.5	5.5
CAPACITY	1106	436
CAPACITY USED	0%	0%
IMPEDANCE FACTOR	1.00	1.00
ACTUAL CAPACITY	1106	436

STEP 3 THRU MOVES FROM	C:WB BEACH	D:EB BEACH
CONFLICTING FLOWS	789	732
CRITICAL GAPS	6.5	6.0
CAPACITY	318	402
CAPACITY USED	47%	0%
IMPEDANCE FACTOR	0.61	1.00
ACTUAL CAPACITY	318	402

STEP 4 LEFT TURNS FROM	C:WB BEACH	D:EB BEACH
CONFLICTING FLOWS	790	866
CRITICAL GAPS	7.0	6.5
CAPACITY	273	282
ACTUAL CAPACITY	273	172

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
ALL MOVES FROM C	ALL	267	-135	F	INFINITE	INFINITE
ALL MOVES FROM D	1	912	911	A	3.95	0.00

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10 UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:04-10-1989 TIME:17:36:45
ESSEX HARRISON 1995 BUILD AM PEAK WITH EXISTING NETWORK]?

LAST DATASETS LOADED OR SAVED
VOLUME=13AM GEOMETRICS=13AM
KEY: D

A- -B

C

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS: FROM C: YIELD
FROM D: STOP
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 2 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: YES
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH C NB HARRISON
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH D SB HARRISON
EXCLUSIVE LEFT TURN LANES: YES
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: EB ESSEX	B: WB ESSEX	C: NB HARRISON	D: SB HARRISON
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A: EB ESSEX			B: WB ESSEX			C: NB HARRISON			D: SB HARRISON		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	769	649	300	0	0	1	0	0	1	69	74	0
PHF	0.91			0.91			0.91			0.91		
ADJ VOLUME	845	713	330	0	0	1	0	0	1	76	81	0
PERCENT GRADE	0.00			0.00			0.00					
PASS CAR/HR	930			0			0	0	1	83	89	0

STEP 1 RIGHT TURNS FROM	C:NB HARRISON	D:SB HARRISON
CONFLICTING FLOWS	357	1
CRITICAL GAPS	4.5	5.0
CAPACITY	945	1199
CAPACITY USED	0%	0%
IMPEDANCE FACTOR	1.00	1.00
ACTUAL CAPACITY	945	1199

1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:04-10-1989 TIME:17.36:45
ESSEX/HARRISON 1995 BUILD AM PEAK WITH EXISTING NETWORK]?

STEP 2 LEFT TURNS FROM	E:WB ESSEX	A:EB ESSEX
CONFLICTING FLOWS	713	1
CRITICAL GAPS	5.0	5.0
CAPACITY	561	1199
CAPACITY USED	0%	78%
IMPEDANCE FACTOR	1.00	0.28
ACTUAL CAPACITY	561	1199

STEP 3 THRU MOVES FROM	C:NB HARRISON	D:SB HARRISON
CONFLICTING FLOWS	1559	1559
CRITICAL GAPS	5.5	6.0
CAPACITY	144	113
CAPACITY USED	0%	79%
IMPEDANCE FACTOR	1.00	0.26
ACTUAL CAPACITY	40	32

STEP 4 LEFT TURNS FROM	C:NB HARRISON	D:SB HARRISON
CONFLICTING FLOWS	1641	1560
CRITICAL GAPS	6.0	6.5
CAPACITY	95	88
ACTUAL CAPACITY	7	25

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM A	930	1199	269	C	[illegible]	[illegible]
ALL MOVES FROM C	1	945	944	A	3.81	0.00
LT FROM D	83	25	-59	F	INFINITE	INFINITE
SHARED TH RT FROM D	89	32	-58	F	INFINITE	INFINITE

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:04-10-1989 TIME 17:46:19
ESSEX/HARRISON 1995 BUILD PM PEAK WITH EXISTING NETWORK]?

LAST DATASETS LOADED OR SAVED
VOLUME=13PM GEOMETRICS=13PM

```
KEY:   D
       |
     A- -B
       |
       C
```

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS FROM C YIELD
FROM D: STOP
PREVAILING SPEED 30 MPH
MAIN STREET # OF LANES 2 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE. YES
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE. NO

MINOR STREET LANES

APPROACH C: NB HARRISON
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES. NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH D: SB HARRISON
EXCLUSIVE LEFT TURN LANES: YES
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A EB ESSEX	B: WB ESSEX	C: NB HARRISON	D: SB HARRISON
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A EB ESSEX			B WB ESSEX			C. NB HARRISON			D: SB HARRISON		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	526	1117	459	0	0	1	0	0	1	238	266	0
PHF	0.91			0.91			0.91			0.91		
ADJ VOLUME	589	1227	504	0	0	1	0	0	1	262	292	0
PERCENT GRADE	0.00			0.00			0.00					
PASS CAR/HR	648			0			0	0	1	288	322	0

STEP 1 RIGHT TURNS FROM	C:NB HARRISON	D:SB HARRISON
CONFLICTING FLOWS	614	1
CRITICAL GAPS	4.5	5.0
CAPACITY	733	1199
CAPACITY USED	0%	0%
IMPEDANCE FACTOR	1.00	1.00
ACTUAL CAPACITY	733	1199

1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:04-10-1989 TIME:17:46:19
ESSEX/HARRISON 1995 BUILD PM PEAK WITH EXISTING NETWORK]?

STEP 2 LEFT TURNS FROM	B:WB ESSEX	A:EB ESSEX
CONFLICTING FLOWS	1227	1
CRITICAL GAPS	5.0	5.0
CAPACITY	296	1199
CAPACITY USED	0%	54%
IMPEDANCE FACTOR	1.00	0.53
ACTUAL CAPACITY	296	1199

STEP 3 THRU MOVES FROM	C:NB HARRISON	D:SB HARRISON
CONFLICTING FLOWS	1818	1817
CRITICAL GAPS	5.5	6.0
CAPACITY	94	71
CAPACITY USED	0%	453%
IMPEDANCE FACTOR	1.00	0.00
ACTUAL CAPACITY	50	38

STEP 4 LEFT TURNS FROM	C:NB HARRISON	D:SB HARRISON
CONFLICTING FLOWS	2110	1818
CRITICAL GAPS	6.0	6.5
CAPACITY	40	54
ACTUAL CAPACITY	0	29

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM A	648	1199	551	A	6.54	1.18
ALL MOVES FROM C	1	0	-1	F	INFINITE	INFINITE
LT FROM D	288	29	-259	F	INFINITE	INFINITE
SHARED TH,RT FROM D	322	38	-284	F	INFINITE	INFINITE

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE 04-10-1989 TIME.17:48:14
ESSEX HARRISON 1995 BUILD SAT PEAK WITH EXISTING NETWORK?

LAST DATASETS LOADED OR SAVED
VOLUME=13SAT GEOMETRICS=13SAT
NE: D

A- -B

C

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000. YES
CONTROLS FROM C: YIELD
FROM D: STOP
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 2 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: YES
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH C: NB HARRISON
EXCLUSIVE LEFT TURN LANES. NO
EXCLUSIVE RIGHT TURN LANES. NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE. NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH D: SB HARRISON
EXCLUSIVE LEFT TURN LANES. YES
EXCLUSIVE RIGHT TURN LANES. NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: EB ESSEX	B. WB ESSEX	C: NB HARRISON	D: SB HARRISON
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A: EB ESSEX			B. WB ESSEX			C. NB HARRISON			D: SB HARRISON		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	480	804	343	0	0	1	0	0	1	188	128	0
PHF	0.87			0.91			0.87			0.87		
ADJ VOLUME	552	924	394	0	0	1	0	0	1	216	147	0
PERCENT GRADE	0.00			0.00			0.00					
PASS CAR/HR	607			0			0	0	1	238	162	0

STEP 1 RIGHT TURNS FROM	C:NB HARRISON	D:SB HARRISON
CONFLICTING FLOWS	462	1
CRITICAL GAPS	4.5	5.0
CAPACITY	853	1199
CAPACITY USED	0%	0%
IMPEDANCE FACTOR	1.00	1.00
ACTUAL CAPACITY	853	1199

DATE:04-10-1989 TIME:17:48:14

ESSEX/HARRISON 1985 BUILD SAT PEAK WITH EXISTING NETWORK?

STEP 2 LEFT TURNS FROM	B:WB ESSEX	A:EB ESSEX
CONFLICTING FLOWS	924	1
CRITICAL GAPS	5.0	5.0
CAPACITY	436	1199
CAPACITY USED	0%	51%
IMPEDANCE FACTOR	1.00	0.57
ACTUAL CAPACITY	436	1199

STEP 3 THRU MOVES FROM	C:NB HARRISON	D:SB HARRISON
CONFLICTING FLOWS	1477	1476
CRITICAL GAPS	5.5	6.0
CAPACITY	154	129
CAPACITY USED	0%	125%
IMPEDANCE FACTOR	1.00	0.00
ACTUAL CAPACITY	94	74

STEP 4 LEFT TURNS FROM	C:NB HARRISON	D:SB HARRISON
CONFLICTING FLOWS	1624	1478
CRITICAL GAPS	6.0	6.5
CAPACITY	101	102
ACTUAL CAPACITY	0	55

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM A	607	1199	592	A	6.08	1.03
ALL MOVES FROM C	1	0	-1	F	INFINITE	INFINITE
LT FROM D	238	58	-180	F	INFINITE	INFINITE
SHARED TH RT FROM D	162	74	-88	F	INFINITE	INFINITE

CINCH PROGRAM VERSION DATE 4-29-1989
1995 HCM - CHAPTER 10. UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:04-10-1989 TIME:17.52:22
HARRISON AVE DE LAF/GARAGE 1995 BUILD AM PEAK EXISTING NETWORK]?

LAST DATASETS LOADED OR SAVED
VOLUME=14AM GEOMETRICS=14AM
KEY D

A- -5

C
GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS FROM C YIELD
FROM D. STOP
FROM C RT LANE: STOP
PREVAILING SPEED 30 MPH
MAIN STREET # OF LANES: 4 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE. NO
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH C NB HARRISON
EXCLUSIVE LEFT TURN LANES. NO
EXCLUSIVE RIGHT TURN LANES. NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR. NO

APPROACH D: GARAGE
EXCLUSIVE LEFT TURN LANES: YES
EXCLUSIVE RIGHT TURN LANES: YES
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE. NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A. AVE DE LAFA	B: AVE DE LAFA	C: NB HARRISON	D: GARAGE
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A AVE DE LAFA			B. AVE DE LAFA			C NB HARRISON			D: GARAGE		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	0	0	1	181	0	515	0	0	1	0	80	0
PHF	0.85			0.85			0.87			0.85		
ADJ VOLUME	0	0	1	213	0	606	0	0	1	0	94	0
PERCENT GRADE	0.00			0.00			0.00					
PERCENT CYCLES	0.00			0.00			0.00			0.00		
PASSENGER CARS	0.00			0.00			0.00			%100.00		
PERCENT LT TRU	0.00			0.00			0.00			0.00		
PERCENT HV TRU	0.00			0.00			0.00			0.00		
PASS CAR/HR	0			234			0	0	1	0	94	0

STEP 1 RIGHT TURNS FROM	C:NE HARRISON	D:GARAGE
CONFLICTING FLOWS	1	303
CRITICAL GAPS	4.5	5.0
CAPACITY	1309	883
CAPACITY USED	0%	0%
IMPEDANCE FACTOR	1.00	1.00
ACTUAL CAPACITY	1309	883

1985 HCM - CHAPTER 10. UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:04-10-1989 TIME.17:52:22
HARRISON/AVE DE LAF/GARAGE 1995 BUILD AM PEAK EXISTING NETWORK]?

STEP 2 LEFT TURNS FROM	B:AVE DE LAFA	A:AVE DE LAFA
CONFLICTING FLOWS	1	606
CRITICAL GAPS	5.5	5.5
CAPACITY	1106	549
CAPACITY USED	21%	0%
IMPEDANCE FACTOR	0.85	1.00
ACTUAL CAPACITY	1106	549

STEP 3 THRU MOVES FROM	C:NB HARRISON	D:GARAGE
CONFLICTING FLOWS	819	517
CRITICAL GAPS	6.0	6.5
CAPACITY	355	475
CAPACITY USED	0%	20%
IMPEDANCE FACTOR	1.00	0.86
ACTUAL CAPACITY	302	404

STEP 4 LEFT TURNS FROM	C:NE HARRISON	D:GARAGE
CONFLICTING FLOWS	914	518
CRITICAL GAPS	6.5	7.0
CAPACITY	262	421
ACTUAL CAPACITY	192	357

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM B	234	1106	872	A	4.13	0.27
ALL MOVES FROM C	1	1309	1307	A	2.75	0.00
TH FROM D.	94	404	309	B	11.63	0.30

CINCH PROGRAM VERSION DATE 4-29-1985
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE 04-10-1989 TIME:17:54:51
HARRISON/AVE DE LAFA GARAGE 1995 BUILD PM PEAK EXISTING NETWORK

LAST DATASETS LOADED OR SAVED
VOLUME=14PM GEOMETRICS=14PM
KEY D
:
A- -B

C
GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS: FROM C: YIELD
FROM D: STOP
FROM E: RT LANE: STOP
PREVAILING SPEED 30 MPH
MAIN STREET # OF LANES 4 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: NO
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH C: NB HARRISON
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH D: GARAGE
EXCLUSIVE LEFT TURN LANES: YES
EXCLUSIVE RIGHT TURN LANES: YES
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: AVE DE LAFA	B: AVE DE LAFA	C: NB HARRISON	D: GARAGE
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A: AVE DE LAFA			B: AVE DE LAFA			C: NB HARRISON			D: GARAGE		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	0	0	1	339	0	230	0	0	1	0	500	0
PHF	0.95			0.95			0.87			0.85		
ADJ VOLUME	0	0	1	357	0	242	0	0	1	0	588	0
PERCENT GRADE	0.00			0.00			0.00					
PERCENT CYCLES	0.00			0.00			0.00			0.00		
PASSENGER CARS	0.00			0.00			0.00			%100.00		
PERCENT LT TRU	0.00			0.00			0.00			0.00		
PERCENT RT TRU	0.00			0.00			0.00			0.00		
PASS CAR/HR	0			393			0	0	1	0	588	0

STEP 1 RIGHT TURNS FROM	C:NB HARRISON	D:GARAGE
CONFLICTING FLOWS	1	121
CRITICAL GAPS	4.5	5.0
CAPACITY	1309	1065
CAPACITY USED	0%	0%
IMPEDANCE FACTOR	1.00	1.00
ACTUAL CAPACITY	1309	1065

1985 HCM - CHAPTER 10 UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:0--10-1989 TIME 17.54.51
HARRISO../AVE DE LAF GARAGE 1995 BUILD PM PEAK EXISTING NETWORK

STEP 1 LEFT TURNS FROM	B.AVE DE LAFA	A.AVE DE LAFA
CONFLICTING FLOWS	1	242
CRITICAL GAPS	5.5	5.5
CAPACITY	1106	847
CAPACITY USED	35%	0%
IMPEDANCE FACTOR	0.72	1.00
ACTUAL CAPACITY	1106	847

STEP 3 THRU MOVES FROM	C.NB HARRISON	D:GARAGE
CONFLICTING FLOWS	599	479
CRITICAL GAPS	6.0	6.5
CAPACITY	482	502
CAPACITY USED	0%	117%
IMPEDANCE FACTOR	1.00	0.00
ACTUAL CAPACITY	347	361

STEP 4 LEFT TURNS FROM	C.NB HARRISON	D GARAGE
CONFLICTING FLOWS	1188	480
CRITICAL GAPS	6.5	7.0
CAPACITY	168	446
ACTUAL CAPACITY	0	321

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM B	393	1106	714	A	5.04	0.55
ALL MOVES FROM C	1	0	-1	F	INFINITE	INFINITE
TH FROM D	588	361	-227	F	INFINITE	INFINITE

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10. UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:04-10-1989 TIME:17.57:03
HARRISON.AVE DE LAF/GARAGE 1995 BUILD SAT PEAK EXISTING NETWORK

LAST DATASETS LOADED OR SAVED
VOLUME=14SAT GEOMETRICS=14SAT
KEY D

A- -B

C

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000? YES
CONTROLS: FROM C. YIELD
FROM D. STOP
FROM D RT LANE. STOP
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 4 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE. NO
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH: C NB HARRISON
EXCLUSIVE LEFT TURN LANES NO
EXCLUSIVE RIGHT TURN LANES. NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE. NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH D GARAGE
EXCLUSIVE LEFT TURN LANES YES
EXCLUSIVE RIGHT TURN LANES. YES
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A. AVE DE LAFA	B. AVE DE LAFA	C: NB HARRISON	D: GARAGE
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A AVE DE LAFA			B: AVE DE LAFA			C: NB HARRISON			D: GARAGE		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	0	0	1	296	0	274	0	0	1	0	240	0
PHF	0.87			0.87			0.87			0.87		
ADJ VOLUME	0	0	1	340	0	315	0	0	1	0	276	0
PERCENT GRADE	0.00			0.00			0.00					
PERCENT CYCLES	0.00			0.00			0.00			0.00		
PASSENGER CARS	0.00			0.00			0.00			%100.00		
PERCENT LT TRU	0.00			0.00			0.00			0.00		
PERCENT HV TRU	0.00			0.00			0.00			0.00		
PASS CAR/HR	0			374			0	0	1	0	276	0

STEP 1 RIGHT TURNS FROM	C:NB HARRISON	D:GARAGE
CONFLICTING FLOWS	1	157
CRITICAL GAPS	4.5	5.0
CAPACITY	1308	1025
CAPACITY USED	0%	0%
IMPEDANCE FACTOR	1.00	1.00

1985 HCM - CHAPTER 10 UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:04-10-1989 TIME:17:57:03
HARRISON/AVE DE LAF/GARAGE 1995 BUILD SAT PEAK EXISTING NETWORK

STEP 2 LEFT TURNS FROM	B AVE DE LAFA	A:AVE DE LAFA
CONFLICTING FLOWS	1	315
CRITICAL GAPS	5.5	5.5
CAPACITY	1106	779
CAPACITY USED	34%	0%
IMPEDANCE FACTOR	0.74	1.00
ACTUAL CAPACITY	1106	779

STEP 3 THRU MOVES FROM	C:NB HARRISON	D:GARAGE
CONFLICTING FLOWS	656	499
CRITICAL GAPS	6.0	6.5
CAPACITY	446	488
CAPACITY USED	0%	57%
IMPEDANCE FACTOR	1.00	0.51
ACTUAL CAPACITY	328	359

STEP 4 LEFT TURNS FROM	C:NB HARRISON	D:GARAGE
CONFLICTING FLOWS	932	500
CRITICAL GAPS	6.5	7.0
CAPACITY	265	433
ACTUAL CAPACITY	95	318

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM B	374	1106	732	A	4.92	0.51
ALL MOVES FROM C.	1	1308	1307	A	2.75	0.00
TH FROM D.	276	359	83	E	43.54	3.34

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE 04-10-1989 TIME 18:01.35
BEDFORD CHAUNCY GARAGE 1995 BUILD AM PEAK EXISTING NETWORK

LAST DATASETS LOADED OR SAVED
VOLUME=16AM GEOMETRICS=16AM
KEY D

A- -E

C

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS FROM C: STOP
FROM D: STOP
PREVAILING SPEED 30 MPH
MAIN STREET # OF LANES: 2 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: YES
MAIN STREET APPROACH E - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH: C: BEDFORD ST
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH: D GARAGE
EXCLUSIVE LEFT TURN LANES NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: NE CHAUNCY	B: SE CHAUNCY	C: BEDFORD ST	D: GARAGE
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A: NE CHAUNCY			B: SE CHAUNCY			C: BEDFORD ST			D: GARAGE		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	103	280	132	0	1	0	393	342	98	39	47	7
PHF	0.92			0.92			0.92			0.92		
ADJ VOLUME	112	304	143	0	1	0	427	372	107	42	51	8
PERCENT GRADE	0.00			0.00			0.00					
PERCENT CYCLES	0.00			0.00			0.00			0.00		
PASSENGER CARS	0.00			0.00			0.00			%100.00		
PERCENT LT TRU	0.00			0.00			0.00			0.00		
PERCENT HV TRU	0.00			0.00			0.00			0.00		
PASS CAR/HR	123			0			470	409	117	42	51	8

STEP 1 RIGHT TURNS FROM	C:BEDFORD ST	D:GARAGE
CONFLICTING FLOWS	304	1
CRITICAL GAPS	5.0	5.0
CAPACITY	882	1199
CAPACITY USED	13%	1%
IMPEDANCE FACTOR	0.91	1.00
ACTUAL CAPACITY	882	1199

1985 HCM - CHAPTER 10 UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE 04-10-1989 TIME:18:01:35
BEDFORD/CHAUNCY,GARAGE 1995 BUILD AM PEAK EXISTING NETWORK

STEP 2 LEFT TURNS FROM	B:SB CHAUNCY	A:NE CHAUNCY
CONFLICTING FLOWS	304	1
CRITICAL GAPS	5.0	5.0
CAPACITY	882	1199
CAPACITY USED	0%	10%
IMPEDANCE FACTOR	1.00	0.94
ACTUAL CAPACITY	882	1199

STEP 3 THRU MOVES FROM	C:BEDFORD ST	D:GARAGE
CONFLICTING FLOWS	417	417
CRITICAL GAPS	6.0	6.0
CAPACITY	613	613
CAPACITY USED	67%	8%
IMPEDANCE FACTOR	0.40	0.95
ACTUAL CAPACITY	575	575

STEP 4 LEFT TURNS FROM	C:BEDFORD ST	D:GARAGE
CONFLICTING FLOWS	476	896
CRITICAL GAPS	6.5	6.5
CAPACITY	504	270
ACTUAL CAPACITY	448	92

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM A	123	1199	1076	A	3.35	0.11
ALL MOVES FROM C	996	526	-470	F	INFINITE	INFINITE
ALL MOVES FROM D	101	182	81	E	44.27	1.24

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10. UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:04-10-1989 TIME:18:08.55
BEDFORD/CHAUNCY/GARAGE 1995 BUILD PM PEAK EXISTING NETWORK

LAST DATASETS LOADED OR SAVED
VOLUME=16PM GEOMETRICS=16PM
KEY. D

A- -B

C

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000. YES
CONTROLS. FROM C STOP
FROM D: STOP
PREVAILING SPEED 30 MPH
MAIN STREET # OF LANES 2 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE. YES
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH C BEDFORD ST
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE. NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH C. GARAGE
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES. NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE. NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A. NB CHAUNCY	B: SB CHAUNCY	C: BEDFORD ST	D: GARAGE
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A. NB CHAUNCY			B. SB CHAUNCY			C. BEDFORD ST			D: GARAGE		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	61	319	61	0	1	0	296	198	52	150	268	79
PHF	0.92			0.92			0.92			0.92		
ALL VOLUME	66	347	66	0	1	0	322	215	57	196	291	86
PERCENT GRADE	0.00			0.00			0.00					
PERCENT CYCLES	0.00			0.00			0.00			0.00		
PASSENGER CARS	0.00			0.00			0.00			%100.00		
PERCENT LT TRU	0.00			0.00			0.00			0.00		
PERCENT HV TRU	0.00			0.00			0.00			0.00		
BASE CAP/HR	72			0			354	237	62	196	291	86

STEP 1 RIGHT TURNS FROM	C.BEDFORD ST	D:GARAGE
CONFLICTING FLOWS	347	1
CRITICAL GAPS	5.0	5.0
CAPACITY	843	1199
CAPACITY USED	7%	7%
IMPEDANCE FACTOR	0.96	0.96
ACTUAL CAPACITY	843	1199

1985 HCM - CHAPTER 10 UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:04-10-1989 TIME.18:08.55
BEDFORD/CHAUNCY/GARAGE 1995 BUILD PM PEAK EXISTING NETWORK

STEP 2 LEFT TURNS FROM	B:SB CHAUNCY	A:NB CHAUNCY
CONFLICTING FLOWS	347	1
CRITICAL GAPS	5.0	5.0
CAPACITY	843	1199
CAPACITY USED	0%	6%
IMPEDANCE FACTOR	1.00	0.97
ACTUAL CAPACITY	843	1199

STEP 3 THRU MOVES FROM	C:BEDFORD ST	D:GARAGE
CONFLICTING FLOWS	414	414
CRITICAL GAPS	6.0	6.0
CAPACITY	616	616
CAPACITY USED	38%	47%
IMPEDANCE FACTOR	0.69	0.60
ACTUAL CAPACITY	595	595

STEP 4 LEFT TURNS FROM	C:BEDFORD ST	D:GARAGE
CONFLICTING FLOWS	791	686
CRITICAL GAPS	6.5	6.5
CAPACITY	317	371
ACTUAL CAPACITY	177	237

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM A	73	1199	1126	A	3.20	0.06
ALL MOVES FROM C	653	264	-389	F	INFINITE	INFINITE
ALL MOVES FROM D	573	414	-159	F	INFINITE	INFINITE

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:04-10-1989 TIME 18:15.15
BEDFORD:CHAUNCY/GARAGE 1995 BUILD SAT PEAK EXISTING NETWORK

LAST DATASETS LOADED OR SAVED
VOLUME=16SAT GEOMETRICS=16SAT
KEY D
:
A- -B

C

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000 YES
CONTROLS: FROM C: STOP
FROM D: STOP
PREVAILING SPEED 30 MPH
MAIN STREET # OF LANES: 2 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE YES
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH: C BEDFORD ST
EXCLUSIVE LEFT TURN LANES NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH: D GARAGE
EXCLUSIVE LEFT TURN LANES NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A NB CHAUNCY	B. SB CHAUNCY	C: BEDFORD ST	D: GARAGE
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A NB CHAUNCY			B: SB CHAUNCY			C: BEDFORD ST			D: GARAGE		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	62	224	101	0	1	0	325	160	120	75	108	20
PHF	0.90			0.90			0.90			0.90		
ADJ VOLUME	69	249	112	0	1	0	361	178	133	83	120	22
PERCENT GRADE	0.00			0.00			0.00					
PERCENT CYCLES	0.00			0.00			0.00			0.00		
PASSENGER CARS	0.00			0.00			0.00			%100.00		
PERCENT LT TRU	0.00			0.00			0.00			0.00		
PERCENT HV TRU	0.00			0.00			0.00			0.00		
PASS CAR/HR	76			0			397	196	147	93	120	22

STEP 1 RIGHT TURNS FROM	C:BEDFORD ST	D:GARAGE
CONFLICTING FLOWS	249	1
CRITICAL GAPS	5.0	5.0
CAPACITY	935	1199
CAPACITY USED	16%	2%
IMPEDANCE FACTOR	0.90	0.99

1985 HCM - CHAPTER 10. UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:04-10-1989 TIME:18.15:15
BEDFORD/CHAUNCY/GARAGE 1995 BUILD SAT PEAK EXISTING NETWORK

STEP 2 LEFT TURNS FROM	6:SB CHAUNCY	A:NB CHAUNCY
CONFLICTING FLOWS	249	1
CRITICAL GAPS	5.0	5.0
CAPACITY	935	1199
CAPACITY USED	0%	6%
IMPEDANCE FACTOR	1.00	0.96
ACTUAL CAPACITY	935	1199

STEP 3 THRU MOVES FROM	C:BEDFORD ST	D:GARAGE
CONFLICTING FLOWS	319	319
CRITICAL GAPS	6.0	6.0
CAPACITY	696	696
CAPACITY USED	28%	17%
IMPEDANCE FACTOR	0.79	0.88
ACTUAL CAPACITY	672	672

STEP 4 LEFT TURNS FROM	C:BEDFORD ST	D:GARAGE
CONFLICTING FLOWS	461	630
CRITICAL GAPS	6.5	6.5
CAPACITY	515	403
ACTUAL CAPACITY	435	274

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM A	76	1199	1123	A	3.21	0.07
ALL MOVES FROM C	739	543	-196	F	INFINITE	INFINITE
ALL MOVES FROM D	226	450	225	C	16.02	1.00

CINCH PROGRAM VERSION DATE 4-29-1988
1995 HCM - CHAPTER 10 UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE 04-16-1999 TIME:18:17.29
What is the title of this analysis (KINGSTON/ESSEX/AVE DE LAF-1995 BUILD AM PEAK
EXISTING NETWORK

LAST DATASETS LOADED OR SAVED
VOLUME=18AM GEOMETRICS=18AM
KEY C

A- -E

C
GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000 YES
CONTROLS: FROM C STOP
FROM D: STOP
PREVAILING SPEED 30 MPH
MAIN STREET # OF LANES: 2 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: NO
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH C: NB KINGSTON
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH D SB KINGSTON
EXCLUSIVE LEFT TURN LANES: YES
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: EB ESSEX	B: WB ESSEX ST	C: NB KINGSTON	D: SB KINGSTON
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A: EB ESSEX			B: WB ESSEX ST			C: NB KINGSTON			D: SB KINGSTON		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	0	673	36	0	0	1	0	0	1	301	104	35
PHF	0.94			0.94			0.94			0.94		
ADJ VOLUME	0	716	38	0	0	1	0	0	1	320	111	37
PERCENT GRADE	0.00			0.00			0.00					
PASS CAR/HR	0			0			0	0	1	352	122	41

STEP 1 RIGHT TURNS FROM	C:NB KINGSTON	D:SB KINGSTON
CONFLICTING FLOWS	735	1
CRITICAL GAPS	5.0	5.0
CAPACITY	547	1199
CAPACITY USED	0%	3%
IMPEDANCE FACTOR	1.00	0.98
ACTUAL CAPACITY	547	1199

1985 HCM - CHAPTER 10 UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)

DATE:04-10-1985 TIME 18:17:29

hat is the title of this analysis [KINGSTON/ESSEX/AVE DE LAF-1995 BUILD AM PEAK

EXISTING NETWORK

STEP 2 LEFT TURNS FROM	B:WB ESSEX ST	A:EB ESSEX
CONFLICTING FLOWS	754	1
CRITICAL GAPS	5.0	5.0
CAPACITY	535	1199
CAPACITY USED	0%	0%
IMPEDANCE FACTOR	1.00	1.00
ACTUAL CAPACITY	535	1199

STEP 3 THRU MOVES FROM	C:NB KINGSTON	D:SB KINGSTON
CONFLICTING FLOWS	736	755
CRITICAL GAPS	6.0	6.0
CAPACITY	399	389
CAPACITY USED	0%	31%
IMPEDANCE FACTOR	1.00	0.76
ACTUAL CAPACITY	399	389

STEP 4 LEFT TURNS FROM	C:NB KINGSTON	D:SB KINGSTON
CONFLICTING FLOWS	884	756
CRITICAL GAPS	6.5	6.5
CAPACITY	274	334
ACTUAL CAPACITY	205	334

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
ALL MOVES FROM C.	1	547	546	A	6.60	0.00
LT FROM D	352	334	-18	F	INFINITE	INFINITE
SHARED THRT FROM D.	163	469	306	B	11.76	0.53

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10 UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:04-10-1989 TIME:18:19:46
What is the title of this analysis [KINGSTON/ESSEX/AVE DE LAF-1995 BUILD PM PEAK
REVISED NETWORK

LAST DATASETS LOADED OR SAVED
VOLUME=18PM GEOMETRICS=18PM

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A-  -B

  C
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GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS FROM C STOP
FROM D. STOP
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES. 2 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: NO
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH. C NB KINGSTON
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES. NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH D. SB KINGSTON
EXCLUSIVE LEFT TURN LANES. YES
EXCLUSIVE RIGHT TURN LANES. NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: EB ESSEX	B. WB ESSEX ST	C: NB KINGSTON	D. SB KINGSTON
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A EB ESSEX			B: WB ESSEX ST			C: NB KINGSTON			D. SB KINGSTON		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	0	1195	129	0	0	1	0	0	1	626	345	94
PHF	0.94			0.94			0.94			0.94		
ADJ VOLUME	0	1271	137	0	0	1	0	0	1	666	367	100
PERCENT GRADE	0.00			0.00			0.00					
PASS CAR/HR	0			0			0	0	1	733	404	110

STEP 1 RIGHT TURNS FROM	C.NB KINGSTON	D:SB KINGSTON
CONFLICTING FLOWS	1340	1
CRITICAL GAPS	5.0	5.0
CAPACITY	254	1199
CAPACITY USED	0%	9%
IMPEDANCE FACTOR	1.00	0.95
ACTUAL CAPACITY	254	1199

1985 HCM - CHAPTER 10. UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:04-10-1989 TIME 18 19:46
hat is the title of this analysis (KINGSTON/ESSEX/AVE DE LAF-1995 BUILD PM PEAK
REVISED NETWORK

STEP 1 LEFT TURNS FROM	B:WB ESSEX ST	A:EB ESSEX
CONFLICTING FLOWS	1409	1
CRITICAL GAPS	5.0	5.0
CAPACITY	231	1199
CAPACITY USED	0%	0%
IMPEDANCE FACTOR	1.00	1.00
ACTUAL CAPACITY	231	1199

STEP 2 THRU MOVES FROM	C:NB KINGSTON	D:SB KINGSTON
CONFLICTING FLOWS	1341	1409
CRITICAL GAPS	6.0	6.0
CAPACITY	162	145
CAPACITY USED	0%	279%
IMPEDANCE FACTOR	1.00	0.00
ACTUAL CAPACITY	162	145

STEP 3 LEFT TURNS FROM	C:NB KINGSTON	D SB KINGSTON
CONFLICTING FLOWS	1806	1410
CRITICAL GAPS	6.5	6.5
CAPACITY	55	115
ACTUAL CAPACITY	0	115

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
ALL MOVES FROM C:	1	0	-1	F	INFINITE	INFINITE
LT FROM D:	733	115	-618	F	INFINITE	INFINITE
SHARED TH/RT FROM D:	514	178	-336	F	INFINITE	INFINITE

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:04-10-1989 TIME:18:21.22
KINGSTON/BEDFORD 1995 BUILD AM PEAK EXISTING NETWORK

LAST DATASETS LOADED OR SAVED
VOLUME=19AM GEOMETRICS=19AM

```
KEY:   D
       |
     A- -E
       |
       C
```

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS: FROM C YIELD
FROM D: STOP
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 2 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE. NO
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE. NO

MINOR STREET LANES

APPROACH C NB KINGSTON
EXCLUSIVE LEFT TURN LANES NO
EXCLUSIVE RIGHT TURN LANES. NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE. NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH D SB KINGSTON
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE. NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A. EB BEDFORD	B. WB BEDFORD	C: NB KINGSTON	D: SB KINGSTON
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A. EB BEDFORD			B. WB BEDFORD			C: NB KINGSTON			D: SB KINGSTON		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	0	0	179	123	548	0	0	1	0	0	219	284
PHF	0.88			0.88			0.88			0.88		
ADJ VOLUME	0	0	203	140	623	0	0	1	0	0	249	323
PERCENT GRADE	0.00			0.00			0.00					
PASS CAR/HR	0			154			0	1	0	0	274	355

STEP 1 RIGHT TURNS FROM	C:NB KINGSTON	D:SB KINGSTON
CONFLICTING FLOWS	102	623
CRITICAL GAPS	4.5	5.0
CAPACITY	1197	623
CAPACITY USED	0%	57%
IMPEDANCE FACTOR	1.00	0.50
ACTUAL CAPACITY	1197	623

1985 HCM - CHAPTER 10. UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)

DATE.04-10-1989 TIME 18:21.22

KINGSTON/BEDFORD 1985 BUILD AM PEAK EXISTING NETWORK

STEP 2 LEFT TURNS FROM	B:WB BEDFORD	A:EB BEDFORD
CONFLICTING FLOWS	203	623
CRITICAL GAPS	5.0	5.0
CAPACITY	979	623
CAPACITY USED	16%	0%
IMPEDANCE FACTOR	0.90	1.00
ACTUAL CAPACITY	979	623

STEP 3 THRU MOVES FROM	C:NB KINGSTON	D:SB KINGSTON
CONFLICTING FLOWS	864	966
CRITICAL GAPS	5.5	6.0
CAPACITY	394	287
CAPACITY USED	0%	95%
IMPEDANCE FACTOR	1.00	0.05
ACTUAL CAPACITY	353	257

STEP 4 LEFT TURNS FROM	C:NB KINGSTON	D:SB KINGSTON
CONFLICTING FLOWS	1436	967
CRITICAL GAPS	6.0	6.5
CAPACITY	138	241
ACTUAL CAPACITY	5	215

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM B	154	979	826	A	4.36	0.19
ALL MOVES FROM C	1	353	352	B	10.24	0.00
ALL MOVES FROM D	629	385	-244	F	INFINITE	INFINITE

CINCH PROGRAM VERSION DATE 4-29-1986
1985 HCM - CHAPTER 10. UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE 04-10-1989 TIME.18:23:07
KINGSTON BEDFORD-1995 BUILD PM PEAK EXISTING NETWORK

LAST DATASETS LOADED OR SAVED
VOLUME=19PM GEOMETRICS=19PM
KEY: D

A- -5
.
C
GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000. YES
CONTROLS FROM C. YIELD
FROM D: STOP
PREVAILING SPEED 30 MPH
MAIN STREET # OF LANES. 2 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE NO
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH C NB KINGSTON
EXCLUSIVE LEFT TURN LANES. NO
EXCLUSIVE RIGHT TURN LANES NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE. NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH D. SB KINGSTON
EXCLUSIVE LEFT TURN LANES. NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A EB BEDFORD	B: WB BEDFORD	C: NB KINGSTON	D. SB KINGSTON
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A EB BEDFORD			B WB BEDFORD			C. NB KINGSTON			D. SB KINGSTON		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	0	0	330	130	294	0	0	1	0	0	362	261
PHF	0.94			0.94			0.94			0.94		
ADJ VOLUME	0	0	351	138	313	0	0	1	0	0	406	279
PERCENT GRADE	0.00			0.00			0.00					
PASS CAR/HR	0			152			0	1	0	0	447	307

STEP 1 RIGHT TURNS FROM	C.NB KINGSTON	D:SB KINGSTON
CONFLICTING FLOWS	176	313
CRITICAL GAPS	4.5	5.0
CAPACITY	1120	874
CAPACITY USED	0%	35%
IMPEDANCE FACTOR	1.00	0.72
ACTUAL CAPACITY	1120	874

1985 HCM - CHAPTER 10. UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)

DATE:04-10-1989 TIME:18:23:07

KINGSTON:BEDFORD-1995 BUILD PM PEAK EXISTING NETWORK

STEP 2 LEFT TURNS FROM	B:WB BEDFORD	A:EB BEDFORD
CONFLICTING FLOWS	351	313
CRITICAL GAPS	5.0	5.0
CAPACITY	839	874
CAPACITY USED	18%	0%
IMPEDANCE FACTOR	0.88	1.00
ACTUAL CAPACITY	839	874

STEP 3 THRU MOVES FROM	C:NB KINGSTON	D:SB KINGSTON
CONFLICTING FLOWS	627	802
CRITICAL GAPS	5.5	6.0
CAPACITY	535	364
CAPACITY USED	0%	123%
IMPEDANCE FACTOR	1.00	0.00
ACTUAL CAPACITY	468	319

STEP 4 LEFT TURNS FROM	C:NB KINGSTON	D:SB KINGSTON
CONFLICTING FLOWS	1312	803
CRITICAL GAPS	6.0	6.5
CAPACITY	169	311
ACTUAL CAPACITY	0	272

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM E.	152	839	687	A	5.24	0.22
ALL MOVES FROM C.	1	0	-1	F	INFINITE	INFINITE
ALL MOVES FROM D:	754	430	-324	F	INFINITE	INFINITE

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10. UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE 04-10-1989 TIME:18:27.42
KINGSTON BEDFORD-1995 BUILD SAT PEAK EXISTING NETWORK

LAST DATASETS LOADED OR SAVED
VOLUME=19SAT GEOMETRICS=19SAT
KEY: I

A- -B
!
C

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS FROM C: YIELD
FROM D: STOP
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 2 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: NO
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH C NB KINGSTON
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH D. SB KINGSTON
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A EB BEDFORD	B: WB BEDFORD	C: NB KINGSTON	D: SB KINGSTON
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A EB BEDFORD			B. WB BEDFORD			C: NB KINGSTON			D. SB KINGSTON		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	0	0	209	92	300	0	0	1	0	0	248	304
PHF	0.92			0.92			0.92			0.92		
ADJ VOLUME	0	0	227	100	326	0	0	1	0	0	270	330
PERCENT GRADE	0.00			0.00			0.00					
PASS CAR/HR	0			110			0	1	0	0	297	363

STEP 1 RIGHT TURNS FROM	C:NB KINGSTON	D:SB KINGSTON
CONFLICTING FLOWS	114	326
CRITICAL GAPS	4.5	5.0
CAPACITY	1184	862
CAPACITY USED	0%	42%
IMPEDANCE FACTOR	1.00	0.65
ACTUAL CAPACITY	1184	862

1985 HCM - CHAPTER 10. UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:04-10-1989 TIME:18:27:42
[KINGSTON/BEDFORD-1995 BUILD SAT PEAK EXISTING NETWORK

STEP 2 LEFT TURNS FROM	B:WB BEDFORD	A:EB BEDFORD
CONFLICTING FLOWS	227	326
CRITICAL GAPS	5.0	5.0
CAPACITY	956	862
CAPACITY USED	12%	0%
IMPEDANCE FACTOR	0.93	1.00
ACTUAL CAPACITY	955	862

STEP 3 THRU MOVES FROM	C:NB KINGSTON	D:SB KINGSTON
CONFLICTING FLOWS	540	653
CRITICAL GAPS	5.5	6.0
CAPACITY	598	448
CAPACITY USED	0%	66%
IMPEDANCE FACTOR	1.00	0.41
ACTUAL CAPACITY	553	415

STEP 4 LEFT TURNS FROM	C:NB KINGSTON	D:SB KINGSTON
CONFLICTING FLOWS	1140	654
CRITICAL GAPS	6.0	6.5
CAPACITY	222	389
ACTUAL CAPACITY	55	361

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM E	110	956	846	A	4.26	0.13
ALL MOVES FROM C:	1	553	551	A	6.53	0.00
ALL MOVES FROM D.	660	581	-79	F	INFINITE	INFINITE

1995 No Build LOS Analysis

Revised Roadway Network

TREMONT ST/TEMPLE PL

1995 NO BUILD AM PEAK WITH REVISED NETWORK

Date: 04-07-1989 Time: 14:14:21

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=1AM GEOMETRICS=1AM SIGNAL=1AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
WB	TEMPLE PL	20	0	0	20	1	0	0	9.0	0.0	0.0	24
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	TREMONT ST	0	1115	0	1115	0	3	0	0.0	10.0	0.0	40

TOTAL VOLUME = 1135

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	0.0%	N	0	0	.000	0		9.0	0
WB	1.0%	2.0%	Y	10	0	.750	200	Y	9.0	3
NB	0.0%	0.0%	N	0	0	.000	0		13.0	0
SB	-1.0%	2.0%	N	0	20	.960	300	Y	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1					*											*	3.5	4	A
2				*				*				*				*	0.0	24	A
3								*						*			44.5	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	20	0	0	.750	27	0	0
NB	0	0	0	.000	0	0	0
SB	0	1115	0	.960	0	1161	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
WB	LT	27	1	1.00	27	1.00	0.00
SB	TH	1161	3	1.10	1278	0.00	0.00

TREMONT ST/TEMPLE PL

1995 NO BUILD AM PEAK WITH REVISED NETWORK

date: 04-07-1989 time: 14:14:22

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	LT	1800	1	0.900	0.990	0.995	0.849	1.000	0.900	1.000	0.950	1158
SB	TH	1800	3	0.933	0.990	1.005	1.000	0.972	0.900	1.000	1.000	4388

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	LT	27	1158	0.02	0.04	51	0.52	*
SB	TH	1278	4388	0.29	0.56	2440	0.52	*

CYCLE= 80.0 LOST=32.0 SUM V/S CRIT= 0.31 TOTAL V/C= 0.52

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	LT	0.52	*	0.04	80.0	28.44	51	2.65	1.00	31.09	D	0.6	2
SB	TH	0.52	*	0.56	80.0	8.45	2440	0.06	0.85	7.23	B	11.5	35

DIR	STREET	DELAY	LOS
WB	TEMPLE PL	31.09	D
SB	TREMONT ST	7.23	B

INTERSECTION DELAY = 7.72 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

TREMONT ST/TEMPLE PL

1995 NO BUILD PM PEAK WITH REVISED NETWORK

Date: 04-07-1989 Time: 14:16:08

1985 HCM - CHAPTER 9. SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=1PM GEOMETRICS=1PM SIGNAL=1PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
WB	TEMPLE PL	20	0	0	20	1	0	0	9.0	0.0	0.0	24
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	TREMONT ST	0	1550	0	1550	0	3	0	0.0	10.0	0.0	40

TOTAL VOLUME = 1570

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	0.0%	N	0	0	.000	0		9.0	0
WB	1.0%	2.0%	Y	10	0	.910	200	Y	9.0	3
NB	0.0%	0.0%	N	0	0	.000	0		13.0	0
SB	-1.0%	2.0%	N	0	20	.910	300	Y	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1					*											*	2.0	4	A
2				*				*				*				*	0.0	24	A
3								*							*		46.0	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	20	0	0	.910	22	0	0
NB	0	0	0	.000	0	0	0
SB	0	1550	0	.910	0	1703	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
WB	LT	22	1	1.00	22	1.00	0.00
SB	TH	1703	3	1.10	1874	0.00	0.00

TREMONT ST/TEMPLE PL

1995 NO BUILD PM PEAK WITH REVISED NETWORK

date: 04-07-1989 time: 14:16:09

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	LT	1800	1	0.900	0.990	0.995	0.849	1.000	0.900	1.000	0.950	1158
SB	TH	1800	3	0.933	0.990	1.005	1.000	0.972	0.900	1.000	1.000	4388

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	LT	22	1158	0.02	0.03	30	0.74	*
SB	TH	1874	4388	0.43	0.57	2521	0.74	*

CYCLE= 80.0 LOST=32.0 SUM V/S CRIT= 0.45 TOTAL V/C= 0.74

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	LT	0.74	*	0.03	80.0	29.43	30	54.83	1.00	84.26	F	0.9	4
SB	TH	0.74	*	0.57	80.0	9.61	2521	1.03	0.85	9.04	8	16.1	49

DIR	STREET	DELAY	LOS
WB	TEMPLE PL	84.26	F
SB	TREMONT ST	9.04	8

INTERSECTION DELAY = 9.91 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

TREMONT ST/WEST ST

1995 NO BUILD AM PEAK WITH REVISED NETWORK

Date 04-07-1989 Time: 14:21:37

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=2AM GEOMETRICS=2AM SIGNAL=2AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
WB	WEST ST	30	0	0	30	1	0	0	12.0	0.0	0.0	24
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	TREMONT ST	0	1135	0	1135	0	3	0	0.0	10.0	0.0	40

TOTAL VOLUME = 1165

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	0.0%	N	0	0	.000	0		9.0	0
WB	1.0%	2.0%	Y	10	0	.960	200	Y	9.0	3
NB	0.0%	0.0%	N	0	0	.000	0		13.0	0
SB	-1.0%	2.0%	N	0	20	.960	300	Y	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1					*											*	3.6	4	A
2				*				*				*				*	0.0	24	A
3								*						*			44.4	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	30	0	0	.960	31	0	0
NB	0	0	0	.000	0	0	0
SB	0	1135	0	.960	0	1182	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
WB	LT	31	1	1.00	31	1.00	0.00
SB	TH	1182	3	1.10	1301	0.00	0.00

TREMONT ST/WEST ST
1995 NO BUILD AM PEAK WITH REVISED NETWORK
date: 04-07-1989 time. 14:21:38

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	LT	1800	1	1.000	0.990	0.995	0.849	1.000	0.900	1.000	0.950	1287
SB	TH	1800	3	0.933	0.990	1.005	1.000	0.972	0.900	1.000	1.000	4388

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	LT	31	1287	0.02	0.05	58	0.53	*
SB	TH	1301	4388	0.30	0.55	2434	0.53	*

CYCLE= 80.0 LOST=32.0 SUM V/S CRIT= 0.32 TOTAL V/C= 0.53

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	LT	0.53	*	0.05	80.0	28.39	58	3.43	1.00	31.82	D	0.7	3
SB	TH	0.53	*	0.55	80.0	8.57	2434	0.08	0.85	7.36	B	11.7	36

DIR	STREET	DELAY	LOS
WB	WEST ST	31.82	D
SB	TREMONT ST	7.36	B

INTERSECTION DELAY = 7.93 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

TREMONT ST/WEST ST

1995 NO BUILD PM PEAK WITH REVISED NETWORK

Date: 04-07-1989 Time: 14:28:13

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=2PM GEOMETRICS=2PM SIGNAL=2PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
WB	WEST ST	30	0	0	30	1	0	0	12.0	0.0	0.0	24
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	TREMONT ST	0	1570	0	1570	0	3	0	0.0	10.0	0.0	40

TOTAL VOLUME = 1600

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	0.0%	N	0	0	.000	0		9.0	0
WB	1.0%	2.0%	Y	10	0	.920	200	Y	9.0	3
NB	0.0%	0.0%	N	0	0	.000	0		13.0	0
SB	-1.0%	2.0%	N	0	20	.920	300	Y	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1					*											*	2.7	4	A
2			*				*				*					*	0.0	24	A
3							*							*			45.3	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	30	0	0	.920	33	0	0
NB	0	0	0	.000	0	0	0
SB	0	1570	0	.920	0	1707	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
WB	LT	33	1	1.00	33	1.00	0.00
SB	TH	1707	3	1.10	1877	0.00	0.00

TREMONT ST/WEST ST

1995 NO BUILD PM PEAK WITH REVISED NETWORK

date 04-07-1989 time: 14:28:14

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	LT	1800	1	1.000	0.990	0.995	0.849	1.000	0.900	1.000	0.950	1287
SB	TH	1800	3	0.933	0.990	1.005	1.000	0.972	0.900	1.000	1.000	4388

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	LT	33	1287	0.03	0.03	43	0.76	*
SB	TH	1877	4388	0.43	0.57	2486	0.76	*

CYCLE= 80.0 LOST=32.0 SUM V/S CRIT= 0.45 TOTAL V/C= 0.76

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	LT	0.76	*	0.03	80.0	29.13	43	43.98	1.00	73.12	F	1.2	4
SB	TH	0.76	*	0.57	80.0	9.99	2486	1.15	0.85	9.46	B	16.4	50

DIR	STREET	DELAY	LOS
WB	WEST ST	73.12	F
SB	TREMONT ST	9.46	B

INTERSECTION DELAY = 10.55 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

TREMONT ST/AVERY ST
1995 NO BUILD AM PEAK WITH REVISED NETWORK
Date: 04-07-1989 Time: 14:41:19

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=3AM GEOMETRICS=3AM SIGNAL=3AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
WB	AVERY ST	654	0	0	654	2	0	0	12.0	0.0	0.0	24
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	TREMONT ST	0	1165	0	1165	0	3	0	0.0	10.0	0.0	40

TOTAL VOLUME = 1819

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	0.0%	N	0	0	.000	0		9.0	0
WB	1.0%	2.0%	Y	10	0	.960	400	Y	9.0	3
NB	0.0%	0.0%	N	0	0	.000	0		13.0	0
SB	-1.0%	2.0%	N	0	20	.960	700	Y	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1								*						*			39.1	4	A
2					*											*	32.9	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	654	0	0	.960	681	0	0
NB	0	0	0	.000	0	0	0
SB	0	1165	0	.960	0	1214	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
WB	LT	681	2	1.05	715	1.00	0.00
SB	TH	1214	3	1.10	1335	0.00	0.00

TREMONT ST/AVERY ST

1995 NO BUILD AM PEAK WITH REVISED NETWORK

date: 04-07-1989 time: 14:41:19

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	LT	1800	2	1.000	0.990	0.995	0.925	1.000	0.900	1.000	0.920	2715
SB	TH	1800	3	0.933	0.990	1.005	1.000	0.972	0.900	1.000	1.000	4388

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	LT	715	2715	0.26	0.41	1115	0.64	*
SB	TH	1335	4388	0.30	0.49	2146	0.62	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.57 TOTAL V/C= 0.63

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	LT	0.64	*	0.41	80.0	14.33	1115	0.97	1.00	15.30	C	8.9	28
SB	TH	0.62	*	0.49	80.0	11.40	2146	0.41	0.85	10.04	B	13.8	42

DIR	STREET	DELAY	LOS
WB	AVERY ST	15.30	C
SB	TREMONT ST	10.04	B

INTERSECTION DELAY = 11.88 INTERSECTION LOS=B

for chosen cycle length 80.0

suggested timing phase 1 is 38.6 secs green, 4.0 secs yellow + red clear

suggested timing phase 2 is 33.4 secs green, 4.0 secs yellow + red clear

TREMONT ST/AVERY ST

1995 NO BUILD PM PEAK WITH REVISED NETWORK

Date: 04-07-1989 Time: 14:42:45

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=3PM GEOMETRICS=3PM SIGNAL=3PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
WB	AVERY ST	870	0	0	870	2	0	0	12.0	0.0	0.0	24
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	TREMONT ST	0	1599	0	1599	0	3	0	0.0	10.0	0.0	40

TOTAL VOLUME = 2469

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	0.0%	N	0	0	.000	0		9.0	0
WB	1.0%	2.0%	Y	10	0	.940	400	Y	9.0	3
NB	0.0%	0.0%	N	0	0	.000	0		13.0	0
SB	-1.0%	2.0%	N	0	20	.940	700	Y	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1								*						*			39.0	4	A
2					*											*	33.0	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	870	0	0	.940	926	0	0
NB	0	0	0	.000	0	0	0
SB	0	1599	0	.940	0	1701	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
WB	LT	926	2	1.05	972	1.00	0.00
SB	TH	1701	3	1.10	1871	0.00	0.00

TREMONT ST/AVERY ST

1995 NO BUILD PM PEAK WITH REVISED NETWORK

date: 04-07-1989 time: 14:42:46

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	LT	1800	2	1.000	0.990	0.995	0.925	1.000	0.900	1.000	0.920	2715
SB	TH	1800	3	0.933	0.990	1.005	1.000	0.972	0.900	1.000	1.000	4388

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	LT	972	2715	0.36	0.41	1120	0.87	*
SB	TH	1871	4388	0.43	0.49	2139	0.87	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.78 TOTAL V/C= 0.87

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	LT	0.87	*	0.41	80.0	16.33	1120	6.05	1.00	22.38	C	13.5	41
SB	TH	0.87	*	0.49	80.0	13.93	2139	3.59	0.85	14.89	B	19.4	59

DIR	STREET	DELAY	LOS
WB	AVERY ST	22.38	C
SB	TREMONT ST	14.89	B

INTERSECTION DELAY = 17.45 INTERSECTION LOS=C

for chosen cycle length 80.0

suggested timing phase 1 is 39.1 secs green, 4.0 secs yellow + red clear

suggested timing phase 2 is 32.9 secs green, 4.0 secs yellow + red clear

BOYLSTON ST/TREMONT ST
1995 NO BUILD AM PEAK WITH REVISED NETWORK
Date: 04-07-1989 Time: 14:59:04

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=4AM GEOMETRICS=4AM SIGNAL=4AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	BOYLSTON ST	0	870	157	1027	0	2	0	0.0	12.0	0.0	46
WB	BOYLSTON ST	0	0	0	0	0	0	0	0.0	0.0	0.0	24
NB	TREMONT ST	0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	TREMONT ST	647	901	298	1846	0	4	0	0.0	10.0	0.0	40

TOTAL VOLUME = 2873

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.930	600	Y	18.5	3
WB	0.0%	0.0%	N	10	0	.000	400	Y	18.5	3
NB	0.0%	0.0%	N	0	0	.000	500	Y	13.0	0
SB	-1.0%	2.0%	N	0	20	.930	700	Y	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1		*	*													*	24.4	4	A
2				*				*				*				*	0.0	20	A
3													*	*	*		27.6	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	870	157	.930	0	935	169
WB	0	0	0	.000	0	0	0
NB	0	0	0	.000	0	0	0
SB	647	901	298	.930	696	969	320

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
EB	TH-RT	1104	2	1.05	1160	0.00	0.15
SB	LT-TH-RT	1985	4	1.10	2183	0.35	0.16

BOYLSTON ST/TREMONT ST

1995 NO BUILD AM PEAK WITH REVISED NETWORK

date: 04-07-1989 time: 14:59:05

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH-RT	1800	2	1.000	0.990	1.000	1.000	0.979	0.900	0.977	1.000	3069
SB	LT-TH-RT	1600	4	0.933	0.990	1.005	1.000	0.979	0.900	0.976	1.000	5111

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH-RT	1160	3069	0.38	0.31	936	1.24	*
SB	LT-TH-RT	2183	5111	0.43	0.34	1763	1.24	*

CYCLE= 80.0 LOST=28.0 SUM V/S CRIT= 0.81 TOTAL V/C= 1.24

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH-RT	1.24	*	0.31	80.0	23.60	936	90.83	0.85	97.26	F	47.3	143
SB	LT-TH-RT	1.24	*	0.34	80.0	22.77	1763	87.11	0.85	93.40	F	81.4	245

DIR	STREET	DELAY	LOS
EB	BOYLSTON ST	97.26	F
SB	TREMONT ST	93.40	F

INTERSECTION DELAY = 94.74 INTERSECTION LOS=F

THE EXISTING TIMING IS OPTIMAL

BOYLSTON ST/TREMONT ST

1995 NO BUILD PM PEAK WITH REVISED NETWORK

Date: 04-07-1989 Time: 15:13:28

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=4PM GEOMETRICS=4PM SIGNAL=4PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	BOYLSTON ST	0	861	331	1192	0	1	0	0.0	12.0	0.0	46
WB	BOYLSTON ST	0	0	0	0	0	0	0	0.0	0.0	0.0	24
NB	TREMONT ST	0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	TREMONT ST	416	1373	697	2486	0	4	0	0.0	10.0	0.0	40

TOTAL VOLUME = 3678

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.920	600	Y	18.5	3
WB	0.0%	0.0%	N	10	0	.000	400	Y	18.5	3
NB	0.0%	0.0%	N	0	0	.000	500	Y	13.0	0
SB	-1.0%	2.0%	N	0	20	.920	700	Y	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1		*	*													*	33.3	4	A
2				*				*				*				*	0.0	20	A
3													*	*	*		18.7	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	861	331	.920	0	936	360
WB	0	0	0	.000	0	0	0
NB	0	0	0	.000	0	0	0
SB	416	1373	697	.920	452	1492	758

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
EB	TH-RT	1296	1	1.00	1296	0.00	0.28
SB	LT-TH-RT	2702	4	1.10	2972	0.17	0.28

BOYLSTON ST/TREMONT ST

1995 NO BUILD PM PEAK WITH REVISED NETWORK

date: 04-07-1989 time: 15:13:29

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH-RT	1800	1	1.000	0.990	1.000	1.000	0.958	0.900	0.796	1.000	1224
SB	LT-TH-RT	1600	4	0.933	0.990	1.005	1.000	0.979	0.900	0.958	1.000	5018

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH-RT	1296	1224	1.06	0.42	510	2.54	*
SB	LT-TH-RT	2972	5018	0.59	0.23	1170	2.54	*

CYCLE= 80.0 LOST=28.0 SUM V/S CRIT= 1.65 TOTAL V/C= 2.54

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH-RT	2.54	*	0.42	80.0	17.73	510	539.82	0.85	473.92	F	230.1	690
SB	LT-TH-RT	2.54	*	0.23	80.0	43.85	1170	535.84	0.85	492.73	F	503.8	1510

DIR	STREET	DELAY	LOS
EB	BOYLSTON ST	473.92	F
SB	TREMONT ST	492.73	F

INTERSECTION DELAY =487.02 INTERSECTION LOS=F

THE EXISTING TIMING IS OPTIMAL

STUART ST/KNEELAND ST/WASHINGTON ST
1995 NO BUILD AM PEAK REVISED NETWORK
Date: 04-07-1989 Time: 15:18:45

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=5AM GEOMETRICS=5AM SIGNAL=

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	STUART ST	141	741	38	920	1	2	0	11.0	11.0	0.0	48
WB	KNEELAND ST	77	620	165	862	0	2	1	0.0	11.0	11.0	48
NB	WASHINGTON ST	222	405	118	745	0	2	0	0.0	12.0	0.0	36
SB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	40

TOTAL VOLUME = 2527

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	Y	15	10	.920	200	Y	15.0	3
WB	0.0%	2.0%	Y	15	10	.920	200	Y	15.0	3
NB	0.0%	2.0%	Y	15	15	.920	200	Y	13.0	3
SB	0.0%	0.0%	N	0	0	.000	200	Y	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1					*	*	*										0.0	0	A
2	*	*	*		*	*	*					*				*	35.4	4	A
3				*				*	*	*	*						36.6	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	141	741	38	.920	153	805	41
WB	77	620	165	.920	84	674	179
NB	222	405	118	.920	241	440	128
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT	153	1	1.00	153	1.00	0.00
EB	TH-RT	847	2	1.05	889	0.00	0.05
WB	LT-TH	758	2	1.05	795	0.11	0.00
WB	RT	179	1	1.00	179	0.00	1.00
NB	LT-TH-RT	810	2	1.05	850	0.30	0.16

STUART ST/KNEELAND ST/WASHINGTON ST
1995 NO BUILD AM PEAK REVISED NETWORK
date: 04-07-1989 time: 15.18:46

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.309	480
EB	TH-RT	1800	2	0.967	0.990	1.000	0.912	0.979	0.900	0.988	1.000	2735
WB	LT-TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.892	2768
WB	RT	1800	1	0.967	0.990	1.000	0.824	0.958	0.900	0.755	1.000	924
NB	LT-TH-RT	1800	2	1.000	0.990	1.000	0.912	0.969	0.900	0.961	0.927	2524

SUPPLEMENTAL WORKSHEET FOR
LEFT-TURN ADJUSTMENT FACTOR FLT
INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	No	Vo	Plto	LGo
EB	80	35	1	153	847	153	1.00	2	758	0.11	0

CALCULATIONS

DIR	Scp	Yo	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
EB	2882	0.263	19.442	0.401	1.000	15.917	0.000	0.000	2.802	0.309	0.309

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	153	480	0.32	0.44	212	0.72	
EB	TH-RT	889	2735	0.33	0.44	1209	0.74	*
WB	LT-TH	795	2768	0.29	0.44	1223	0.65	
WB	RT	179	924	0.19	0.44	408	0.44	
NB	LT-TH-RT	850	2524	0.34	0.46	1156	0.74	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.66 TOTAL V/C= 0.74

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	0.72		0.44	80.0	13.91	212	9.55	0.85	19.94	C	2.1	7
EB	TH-RT	0.74	*	0.44	80.0	14.02	1209	1.99	0.85	13.62	B	10.5	32
WB	LT-TH	0.65		0.44	80.0	13.28	1223	0.97	0.85	12.11	B	9.4	29
WB	RT	0.44		0.44	80.0	11.75	408	0.00	0.85	9.99	B	2.2	8
NB	LT-TH-RT	0.74	*	0.46	80.0	13.47	1156	2.08	0.85	13.22	B	9.8	30

DIR	STREET	DELAY	LOS
EB	STUART ST	14.55	B
WB	KNEELAND ST	11.72	B
NB	WASHINGTON ST	13.22	B

INTERSECTION DELAY = 13.19 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

STUART ST/KNEELAND ST/WASHINGTON ST
1995 NO BUILD PM PEAK REVISED NETWORK
Date 04-07-1989 Time: 15:20:43

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=5PM GEOMETRICS=5PM SIGNAL=5PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	STUART ST	175	740	73	988	1	2	0	11.0	11.0	0.0	48
WB	KNEELAND ST	107	833	88	1028	0	2	1	0.0	11.0	11.0	48
NB	WASHINGTON ST	109	204	233	546	0	2	0	0.0	12.0	0.0	36
SB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	40

TOTAL VOLUME = 2562

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	Y	15	10	.900	200	Y	15.0	3
WB	0.0%	2.0%	Y	15	10	.900	200	Y	15.0	3
NB	0.0%	2.0%	Y	15	15	.900	200	Y	13.0	3
SB	0.0%	0.0%	N	0	0	.000	200	Y	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1					*	*	*										0.0	0	A
2	*	*	*		*	*	*					*				*	49.7	4	A
3				*				*	*	*	*						22.3	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	175	740	73	.900	194	822	81
WB	107	833	88	.900	119	926	98
NB	109	204	233	.900	121	227	259
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
EB	LT	194	1	1.00	194	1.00	0.00
EB	TH-RT	903	2	1.05	949	0.00	0.09
WB	LT-TH	1044	2	1.05	1097	0.11	0.00
WB	RT	98	1	1.00	98	0.00	1.00
NB	LT-TH-RT	607	2	1.05	637	0.20	0.43

STUART ST/KNEELAND ST/WASHINGTON ST
1995 NO BUILD PM PEAK REVISED NETWORK
date: 04-07-1989 time: 15:20:44

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.205	318
EB	TH-RT	1800	2	0.967	0.990	1.000	0.912	0.979	0.900	0.978	1.000	2707
WB	LT-TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.874	2711
WB	RT	1800	1	0.967	0.990	1.000	0.824	0.958	0.900	0.755	1.000	924
NB	LT-TH-RT	1800	2	1.000	0.990	1.000	0.912	0.969	0.900	0.895	0.951	2413

SUPPLEMENTAL WORKSHEET FOR
LEFT-TURN ADJUSTMENT FACTOR FLT
INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	No	Vo	Plto	LGo
EB	60	50	1	194	903	194	1.00	2	1044	0.11	0

CALCULATIONS

DIR	Scp	Yo	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
EB	2772	0.377	31.320	0.222	1.000	18.342	0.000	0.000	5.063	0.205	0.205

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	194	318	0.61	0.62	197	0.98	*
EB	TH-RT	949	2707	0.35	0.62	1681	0.56	
WB	LT-TH	1097	2711	0.40	0.62	1683	0.65	
WB	RT	98	924	0.11	0.62	573	0.17	
NB	LT-TH-RT	637	2413	0.26	0.28	674	0.95	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.88 TOTAL V/C= 0.97

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	0.98	*	0.62	80.0	11.25	197	45.85	0.85	48.62	E	4.2	14
EB	TH-RT	0.56		0.62	80.0	6.73	1681	0.24	0.85	5.93	B	7.6	24
WB	LT-TH	0.65		0.62	80.0	7.34	1683	0.71	0.85	6.85	B	8.8	27
WB	RT	0.17		0.62	80.0	4.89	573	0.00	0.85	4.16	A	0.8	3
NB	LT-TH-RT	0.95	*	0.28	80.0	21.46	674	17.45	0.85	33.07	D	12.1	37

DIR	STREET	DELAY	LOS
EB	STUART ST	13.19	B
WB	KNEELAND ST	6.63	B
NB	WASHINGTON ST	33.07	D

INTERSECTION DELAY = 14.81 INTERSECTION LOS=B

for chosen cycle length 80.0
suggested timing phase 1 is 0.0 secs green, 0.0 secs yellow + red clear
suggested timing phase 2 is 50.3 secs green, 4.0 secs yellow + red clear
suggested timing phase 3 is 21.7 secs green, 4.0 secs yellow + red clear

LAGRANGE ST/BEACH ST/WASHINGTON ST

1995 NO BUILD AM PEAK REVISED NETWORK

Date 04-07-1989 Time: 15:30:16

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=6AM GEOMETRICS=6AM SIGNAL=6AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	LAGRANGE ST	29	0	0	29	1	0	0	12.0	0.0	0.0	22
WB	BEACH ST	0	0	75	75	0	0	1	0.0	0.0	12.0	28
NB	WASHINGTON ST	0	711	0	711	0	2	0	0.0	10.0	0.0	32
SB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	40

TOTAL VOLUME = 815

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	15	0	.900	200	Y	10.0	3
WB	0.0%	2.0%	Y	10	0	.900	200	Y	10.0	3
NB	0.0%	2.0%	N	15	15	.900	200	Y	17.0	3
SB	0.0%	0.0%	N	0	0	.000	200	Y	17.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*											*					4.6	4	A
2				*				*		*							62.6	4	A
3				*			*					*					15.8	4	A

CYCLE= 95.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	29	0	0	.900	32	0	0
WB	0	0	75	.900	0	0	83
NB	0	711	0	.900	0	790	0
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT	32	1	1.00	32	1.00	0.00
WB	RT	83	1	1.00	83	0.00	1.00
NB	TH	790	2	1.05	829	0.00	0.00

LAGRANGE ST/BEACH ST/WASHINGTON ST

1995 NO BUILD AM PEAK REVISED NETWORK

date: 04-07-1989 time: 15:30:17

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	1.000	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1524
WB	RT	1800	1	1.000	0.990	1.000	0.849	1.000	0.900	0.850	1.000	1157
NB	TH	1800	2	0.933	0.990	1.000	1.000	0.969	0.900	1.000	1.000	2900

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	32	1524	0.02	0.05	74	0.43	*
WB	RT	83	1157	0.07	0.17	192	0.43	*
NB	TH	829	2900	0.29	0.66	1912	0.43	*

CYCLE= 95.0 LOST=12.0 SUM V/S CRIT= 0.38 TOTAL V/C= 0.43

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	0.43	*	0.05	95.0	33.37	74	0.00	1.00	33.37	D	0.8	3
WB	RT	0.43	*	0.17	95.0	27.06	192	0.00	0.85	23.00	C	1.8	6
NB	TH	0.43	*	0.66	95.0	5.88	1912	0.00	0.85	5.00	A	7.1	22

DIR	STREET	DELAY	LOS
EB	LAGRANGE ST	33.37	D
WB	BEACH ST	23.00	C
NB	WASHINGTON ST	5.00	A

INTERSECTION DELAY = 7.55 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

LAGRANGE ST/BEACH ST/WASHINGTON ST
1995 NO BUILD PM PEAK WITH REVISED NETWORK
Date: 04-07-1989 Time: 15:32:32

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=6PM GEOMETRICS=6PM SIGNAL=6PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	LAGRANGE ST	29	0	0	29	1	0	0	12.0	0.0	0.0	22
WB	BEACH ST	0	0	277	277	0	0	1	0.0	0.0	12.0	28
NB	WASHINGTON ST	0	468	0	468	0	2	0	0.0	10.0	0.0	32
SB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	40

TOTAL VOLUME = 774

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	15	0	.900	200	Y	10.0	3
WB	0.0%	2.0%	Y	10	0	.900	200	Y	10.0	3
NB	0.0%	2.0%	N	15	15	.900	200	Y	17.0	3
SB	0.0%	0.0%	N	0	0	.000	200	Y	17.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*											*					3.7	4	A
2				*				*		*							32.9	4	A
3				*			*					*					46.4	4	A

CYCLE= 95.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	29	0	0	.900	32	0	0
WB	0	0	277	.900	0	0	308
NB	0	468	0	.900	0	520	0
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT	32	1	1.00	32	1.00	0.00
WB	RT	308	1	1.00	308	0.00	1.00
NB	TH	520	2	1.05	546	0.00	0.00

LAGRANGE ST/BEACH ST/WASHINGTON ST
1995 NO BUILD PM PEAK WITH REVISED NETWORK
date 04-07-1989 time: 15:32:33

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	1.000	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1524
WB	RT	1800	1	1.000	0.990	1.000	0.849	1.000	0.900	0.850	1.000	1157
NB	TH	1800	2	0.933	0.990	1.000	1.000	0.969	0.900	1.000	1.000	2900

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	32	1524	0.02	0.04	59	0.54	*
WB	RT	308	1157	0.27	0.49	566	0.54	*
NB	TH	546	2900	0.19	0.35	1004	0.54	*

CYCLE= 95.0 LOST=12.0 SUM V/S CRIT= 0.48 TOTAL V/C= 0.54

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	0.54	*	0.04	95.0	34.07	59	4.39	1.00	38.46	D	0.9	3
WB	RT	0.54	*	0.49	95.0	12.85	566	0.47	0.85	11.32	B	4.2	13
NB	TH	0.54	*	0.35	95.0	19.02	1004	0.27	0.85	16.39	C	9.0	28

DIR	STREET	DELAY	LOS
EB	LAGRANGE ST	38.46	D
WB	BEACH ST	11.32	B
NB	WASHINGTON ST	16.39	C

INTERSECTION DELAY = 15.43 INTERSECTION LOS=C

THE EXISTING TIMING IS OPTIMAL

BOYLSTON ST/ESSEX ST/WASHINGTON ST
1995 NO BUILD AM PEAK WITH REVISED NETWORK
Date. 04-07-1989 Time: 15:43:48

1985 HCM - CHAPTER 9. SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=7AM GEOMETRICS=7AM SIGNAL=7AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	BOYLSTON ST	89	1083	0	1172	1	2	0	11.0	11.0	0.0	28
WB	ESSEX ST	0	0	0	0	0	0	0	0.0	0.0	0.0	31
NB	WASHINGTON ST	0	287	528	815	0	1	2	0.0	11.0	11.0	36
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	36

TOTAL VOLUME = 1987

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	0	.930	200	Y	14.8	3
WB	0.0%	0.0%	N	0	0	.000	200		14.8	0
NB	0.0%	2.0%	N	0	0	.930	550	Y	16.0	3
SB	0.0%	0.0%	N	0	0	.000	750	Y	16.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*	*										*					32.7	4	A
2				*						*	*						21.3	4	A
3				*				*				*				*	0.0	18	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	89	1083	0	.930	96	1165	0
WB	0	0	0	.000	0	0	0
NB	0	287	528	.930	0	309	568
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
EB	LT	96	1	1.00	96	1.00	0.00
EB	TH	1165	2	1.05	1223	0.00	0.00
NB	TH	309	1	1.00	309	0.00	0.00
NB	RT	568	2	1.05	596	0.00	1.00

BOYLSTON ST/ESSEX ST/WASHINGTON ST

1995 NO BUILD AM PEAK WITH REVISED NETWORK

date. 04-07-1989 time. 15 43 49

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1473
EB	TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3101
NB	TH	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	1550
NB	RT	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	0.750	1.000	2326

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	96	1473	0.06	0.41	603	0.16	
EB	TH	1223	3101	0.39	0.41	1269	0.96	*
NB	TH	309	1550	0.20	0.27	412	0.75	
NB	RT	596	2326	0.26	0.27	618	0.96	*

CYCLE= 80.0 LOST=26.0 SUM V/S CRIT= 0.65 TOTAL V/C= 0.96

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	0.16		0.41	80.0	11.35	603	0.00	1.00	11.35	B	1.3	5
EB	TH	0.96	*	0.41	80.0	17.53	1269	13.48	0.85	26.36	D	18.7	57
NB	TH	0.75		0.27	80.0	20.45	412	6.19	0.85	22.65	C	5.0	16
NB	RT	0.96	*	0.27	80.0	22.03	618	21.27	0.85	36.81	D	12.2	37

DIR	STREET	DELAY	LOS
EB	BOYLSTON ST	25.27	D
NB	WASHINGTON ST	31.98	D

INTERSECTION DELAY = 28.00 INTERSECTION LOS=D

THE EXISTING TIMING IS OPTIMAL

BOYLSTON ST/ESSEX ST/WASHINGTON ST
1995 NO BUILD PM PEAK WITH REVISED NETWORK
Date: 04-07-1989 Time: 15:45:32

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=7PM GEOMETRICS=7PM SIGNAL=7PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	BOYLSTON ST	238	1348	0	1586	1	2	0	11.0	11.0	0.0	28
WB	ESSEX ST	0	0	0	0	0	0	0	0.0	0.0	0.0	31
NB	WASHINGTON ST	0	293	482	775	0	1	2	0.0	11.0	11.0	36
SE		0	0	0	0	0	0	0	0.0	0.0	0.0	36

TOTAL VOLUME = 2361

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	0	.910	200	Y	14.8	3
WE	0.0%	0.0%	N	0	0	.000	200		14.8	0
NB	0.0%	2.0%	N	0	0	.910	590	Y	16.0	3
SB	0.0%	0.0%	N	0	0	.000	750	Y	16.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*	*										*					36.6	4	A
2				*						*	*						17.4	4	A
3				*				*				*				*	0.0	18	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	238	1348	0	.910	262	1481	0
WB	0	0	0	.000	0	0	0
NB	0	293	482	.910	0	322	530
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT	262	1	1.00	262	1.00	0.00
EB	TH	1481	2	1.05	1555	0.00	0.00
NE	TH	322	1	1.00	322	0.00	0.00
NB	RT	530	2	1.05	556	0.00	1.00

BOYLSTON ST/ESSEX ST/WASHINGTON ST

1995 NO BUILD PM PEAK WITH REVISED NETWORK

date: 04-07-1989 time: 15:45:33

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1473
EB	TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3101
NB	TH	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	1550
NB	RT	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	0.750	1.000	2326

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	262	1473	0.18	0.46	673	0.39	
EB	TH	1555	3101	0.50	0.46	1417	1.10	*
NB	TH	322	1550	0.21	0.22	338	0.95	
NB	RT	556	2326	0.24	0.22	507	1.10	*

CYCLE= 80.0 LOST=26.0 SUM V/S CRIT= 0.74 TOTAL V/C= 1.10

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	0.39		0.46	80.0	10.90	673	0.00	1.00	10.90	B	3.2	10
EB	TH	1.10	*	0.46	80.0	17.98	1417	43.06	0.85	51.88	E	36.7	111
NB	TH	0.95		0.22	80.0	23.47	338	28.60	0.85	44.26	E	7.9	25
NB	RT	1.10	*	0.22	80.0	24.44	507	54.42	0.85	67.03	F	17.4	53

DIR	STREET	DELAY	LOS
EB	BOYLSTON ST	45.98	E
NB	WASHINGTON ST	58.68	E

INTERSECTION DELAY = 50.12 INTERSECTION LOS=E

THE EXISTING TIMING IS OPTIMAL

BOYLSTON ST/ESSEX ST/WASHINGTON ST
1995 NO BUILD SAT PEAK WITH REVISED NETWORK
Date: 04-07-1989 Time: 15:56:06

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=7SAT GEOMETRICS=7SAT SIGNAL=7SAT

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	BOYLSTON ST	190	1175	0	1365	1	2	0	11.0	11.0	0.0	28
WB	ESSEX ST	0	0	0	0	0	0	0	0.0	0.0	0.0	31
NB	WASHINGTON ST	0	156	397	553	0	1	2	0.0	11.0	11.0	36
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	36

TOTAL VOLUME = 1918

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	0	.930	200	Y	14.8	3
WB	0.0%	0.0%	N	0	0	.000	200		14.8	0
NB	0.0%	2.0%	N	0	0	.930	550	Y	16.0	3
SB	0.0%	0.0%	N	0	0	.000	750	Y	16.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*	*										*					37.2	4	A
2				*						*	*						16.8	4	A
3				*				*				*				*	0.0	18	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	190	1175	0	.930	204	1263	0
WB	0	0	0	.000	0	0	0
NB	0	156	397	.930	0	168	427
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
EB	LT	204	1	1.00	204	1.00	0.00
EB	TH	1263	2	1.05	1327	0.00	0.00
NB	TH	168	1	1.00	168	0.00	0.00
NB	RT	427	2	1.05	448	0.00	1.00

BOYLSTON ST/ESSEX ST/WASHINGTON ST
1995 NO BUILD SAT PEAK WITH REVISED NETWORK
date: 04-07-1989 time: 15:56:07

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1473
EB	TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3101
NB	TH	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	1550
NB	RT	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	0.750	1.000	2326

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	204	1473	0.14	0.47	685	0.30	
EB	TH	1327	3101	0.43	0.47	1443	0.92	*
NB	TH	168	1550	0.11	0.21	325	0.52	
NB	RT	448	2326	0.19	0.21	488	0.92	*

CYCLE= 80.0 LOST=26.0 SUM V/S CRIT= 0.62 TOTAL V/C= 0.92

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	0.30		0.47	80.0	10.09	685	0.00	1.00	10.09	B	2.4	8
EB	TH	0.92	*	0.47	80.0	15.19	1443	7.79	0.85	19.53	C	16.4	50
NB	TH	0.52		0.21	80.0	21.29	325	0.28	0.85	18.34	C	2.9	10
NB	RT	0.92	*	0.21	80.0	23.52	488	17.95	0.85	35.26	D	9.2	28

DIR	STREET	DELAY	LOS
EB	BOYLSTON ST	18.27	C
NB	WASHINGTON ST	30.65	D

INTERSECTION DELAY = 21.82 INTERSECTION LOS=C

THE EXISTING TIMING IS OPTIMAL

AVERY ST/HAYWARD ST/WASHINGTON ST
1995 NO BUILD AM PEAK WITH REVISED NETWORK
Date: 04-07-1989 Time: 15:52:29

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=8AM GEOMETRICS=8AM SIGNAL=8AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	AVERY ST	0	0	0	0	0	0	0	0.0	0.0	0.0	22
WB	HAYWARD ST	0	307	20	327	0	2	0	0.0	12.0	0.0	24
NB	WASHINGTON ST	379	0	0	379	2	0	0	12.0	0.0	0.0	36
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	0

TOTAL VOLUME = 706

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	0.0%	N	5	0	.000	200	Y	12.5	3
WB	0.0%	2.0%	N	0	0	.900	200	Y	12.5	3
NB	0.0%	2.0%	Y	10	0	.900	200	Y	12.0	3
SB	0.0%	0.0%	N	0	0	.000	200	Y	12.0	0

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1						*	*					*					30.6	4	A
2								*	*							*	41.4	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	0	307	20	.900	0	341	22
NB	379	0	0	.900	421	0	0
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
WB	TH-RT	363	2	1.05	382	0.00	0.06
NB	LT	421	2	1.05	442	1.00	0.00

AVERY ST/HAYWARD ST/WASHINGTON ST
1995 NO BUILD AM PEAK WITH REVISED NETWORK
date: 04-07-1989 time. 15:52:29

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	TH-RT	1800	2	1.000	0.990	1.000	1.000	1.000	0.900	0.991	1.000	3178
NB	LT	1800	2	1.000	0.990	1.000	0.925	1.000	0.900	1.000	0.920	2728

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	TH-RT	382	3178	0.12	0.38	1217	0.31	*
NB	LT	442	2728	0.16	0.52	1411	0.31	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.28 TOTAL V/C= 0.31

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	TH-RT	0.31	*	0.38	80.0	13.15	1217	0.00	0.85	11.18	B	5.0	16
NB	LT	0.31	*	0.52	80.0	8.46	1411	0.00	1.00	8.46	B	4.5	14

DIR	STREET	DELAY	LOS
WB	HAYWARD ST	11.18	B
NB	WASHINGTON ST	8.46	B

INTERSECTION DELAY = 9.72 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

AVERY ST/HAYWARD ST/WASHINGTON ST

1995 NO BUILD PM PEAK WITH REVISED NETWORK

Date: 04-07-1989 Time: 15:54:22

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=BPM GEOMETRICS=BPM SIGNAL=BPM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	AVERY ST	0	0	0	0	0	0	0	0.0	0.0	0.0	22
WB	HAYWARD ST	0	360	30	390	0	2	0	0.0	12.0	0.0	24
NB	WASHINGTON ST	546	0	0	546	2	0	0	12.0	0.0	0.0	36
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	0

TOTAL VOLUME = 936

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	0.0%	N	5	0	.000	200	Y	12.5	3
WB	0.0%	2.0%	N	0	0	.900	200	Y	12.5	3
NB	0.0%	2.0%	Y	10	0	.900	200	Y	12.0	3
SB	0.0%	0.0%	N	0	0	.000	200	Y	12.0	0

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1						*	*					*					27.4	4	A
2								*	*								44.6	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	0	360	30	.900	0	400	33
NB	546	0	0	.900	607	0	0
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
WB	TH-RT	433	2	1.05	455	0.00	0.08
NB	LT	607	2	1.05	637	1.00	0.00

AVERY ST/HAYWARD ST/WASHINGTON ST
1995 NO BUILD PM PEAK WITH REVISED NETWORK
date. 04-07-1989 time: 15:54:23

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	TH-RT	1800	2	1.000	0.990	1.000	1.000	1.000	0.900	0.986	1.000	3171
NB	LT	1800	2	1.000	0.990	1.000	0.925	1.000	0.900	1.000	0.920	2728

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	TH-RT	455	3171	0.14	0.34	1086	0.42	*
NB	LT	637	2728	0.23	0.56	1521	0.42	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.38 TOTAL V/C= 0.42

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	Th-RT	0.42	*	0.34	80.0	15.34	1086	0.00	0.85	13.04	B	6.3	20
NB	LT	0.42	*	0.56	80.0	7.77	1521	0.00	1.00	7.77	B	6.0	19

DIR	STREET	DELAY	LOS
WB	HAYWARD ST	13.04	B
NB	WASHINGTON ST	7.77	B

INTERSECTION DELAY = 9.96 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

HARRISON AVR/STUART ST/KNEELAND ST

1995 NO BUILD AM PEAK WITH REVISED NETWORK

Date: 04-08-1989 Time. 14.35:49

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=11AM GEOMETRICS=11AM SIGNAL=11AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	STUART ST	0	768	80	848	0	2	1	0.0	11.0	11.0	60
WB	KNEELAND ST	76	768	0	844	0	3	0	0.0	11.0	0.0	60
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	26
SB	HARRISON AVE	111	71	89	271	0	1	0	0.0	12.0	0.0	26

TOTAL VOLUME = 1963

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	Y	10	10	.960	200	Y	18.0	3
WB	0.0%	2.0%	Y	10	10	.960	200	Y	18.0	3
NB	0.0%	0.0%	N	0	0	.000	0		9.5	0
SB	0.0%	2.0%	Y	5	5	.960	200	Y	9.5	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1		*	*		*	*						*				*	35.9	4	A
2				*				*					*	*	*		36.1	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	768	80	.960	0	800	83
WB	76	768	0	.960	79	800	0
NB	0	0	0	.000	0	0	0
SB	111	71	89	.960	116	74	93

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	TH	800	2	1.05	840	0.00	0.00
EB	RT	83	1	1.00	83	0.00	1.00
WB	LT-TH	879	3	1.10	967	0.09	0.00
SB	LT-TH-RT	282	1	1.00	282	0.41	0.33

HARRISON AVR/STUART ST/KNEELAND ST
1995 NO BUILD AM PEAK WITH REVISED NETWORK
date: 04-06-1989 time. 14:35:50

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH	1600	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	2756
EB	RT	1600	1	0.967	0.990	1.000	0.849	0.958	0.900	0.850	1.000	953
WB	LT-TH	1600	3	0.967	0.990	1.000	0.950	0.986	0.900	1.000	0.810	3136
SB	LT-TH-RT	1800	1	1.000	0.990	1.000	0.875	0.979	0.900	0.824	0.806	912

SUPPLEMENTAL WORKSHEET FOR
LEFT-TURN ADJUSTMENT FACTOR FLT
INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	Nc	Vo	Plto	LGo
WB	80	36	3	679	879	79	0.09	2	800	0.00	0

CALCULATIONS

DIR	Sop	Yc	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
WB	3600	0.222	23.350	0.375	0.578	12.589	0.422	1.452	3.000	0.430	0.810

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH	840	2756	0.30	0.45	1238	0.68	
EB	RT	83	953	0.09	0.45	428	0.19	
WB	LT-TH	967	3136	0.31	0.45	1409	0.69	*
SB	LT-TH-RT	282	912	0.31	0.45	411	0.69	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.62 TOTAL V/C= 0.69

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CN	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH	0.68		0.45	80.0	13.26	1238	1.23	0.85	12.32	B	9.8	30
EB	RT	0.19		0.45	80.0	10.10	428	0.00	0.85	8.59	B	1.0	4
WB	LT-TH	0.69	*	0.45	80.0	13.33	1409	1.16	0.85	12.32	B	10.8	33
SB	LT-TH-RT	0.69	*	0.45	80.0	13.28	411	3.87	0.85	14.57	B	3.4	11

DIR	STREET	DELAY	LOS
EB	STUART ST	11.98	B
WB	KNEELAND ST	12.32	B
SB	HARRISON AVE	14.57	B

INTERSECTION DELAY = 12.47 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

HARRISON AVE/STUART ST/KNEELAND ST
1995 NO BUILD PM PEAK WITH REVISED NETWORK
Date: 04-08-1989 Time: 14.40:26

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=11PM GEOMETRICS=11PM SIGNAL=11PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	STUART ST	0	885	79	964	0	2	1	0.0	11.0	11.0	60
WB	KNEELAND ST	102	907	0	1009	0	3	0	0.0	11.0	0.0	60
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	26
SB	HARRISON AVE	258	170	114	542	0	1	0	0.0	12.0	0.0	26

TOTAL VOLUME = 2515

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	Y	10	10	.950	200	Y	18.0	3
WB	0.0%	2.0%	Y	10	10	.950	200	Y	18.0	3
NB	0.0%	0.0%	N	0	0	.000	0		9.5	0
SB	0.0%	2.0%	Y	5	5	.950	200	Y	9.5	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1		*	*		*	*						*				*	28.4	4	A
2				*				*					*	*	*		43.6	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	885	79	.950	0	932	83
WB	102	907	0	.950	107	955	0
NB	0	0	0	.000	0	0	0
SB	258	170	114	.950	272	179	120

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
EB	TH	932	2	1.05	978	0.00	0.00
EB	RT	83	1	1.00	83	0.00	1.00
WB	LT-TH	1062	3	1.10	1168	0.10	0.00
SB	LT-TH-RT	571	1	1.00	571	0.48	0.21

HARRISON AVE/STUART ST/KNEELAND ST

1995 NO BUILD PM PEAK WITH REVISED NETWORK

date 04-08-1989 time: 14.40:27

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH	1600	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	2756
EB	RT	1600	1	0.967	0.990	1.000	0.849	0.958	0.900	0.850	1.000	953
WB	LT-TH	1600	3	0.967	0.990	1.000	0.950	0.986	0.900	1.000	0.750	2902
SB	LT-TH-RT	1800	1	1.000	0.990	1.000	0.875	0.979	0.900	0.852	0.790	924

SUPPLEMENTAL WORKSHEET FOR

LEFT-TURN ADJUSTMENT FACTOR FLT

INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	No	Vo	Plto	LGo
WB	80	28	3	1062	1062	107	0.10	2	932	0.00	0

CALCULATIONS

DIR	Sop	Yo	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
WB	3600	0.259	10.425	0.293	0.862	18.004	0.138	0.320	3.843	0.249	0.750

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH	978	2756	0.35	0.36	980	1.00	
EB	RT	83	953	0.09	0.36	339	0.25	
WB	LT-TH	1168	2902	0.40	0.36	1031	1.13	*
SB	LT-TH-RT	571	924	0.62	0.54	503	1.13	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 1.02 TOTAL V/C= 1.13

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH	1.00		0.36	80.0	19.58	980	21.84	0.85	35.21	D	18.5	56
EB	RT	0.25		0.36	80.0	13.84	339	0.00	0.85	11.76	B	1.2	4
WB	LT-TH	1.13	*	0.36	80.0	21.15	1031	56.40	0.85	65.91	F	32.9	100
SB	LT-TH-RT	1.13	*	0.54	80.0	16.46	503	64.69	0.85	68.98	F	17.1	52

DIR	STREET	DELAY	LOS
EB	STUART ST	33.37	D
WB	KNEELAND ST	65.91	F
SB	HARRISON AVE	68.98	F

INTERSECTION DELAY = 54.20 INTERSECTION LOS=E

THE EXISTING TIMING IS OPTIMAL

CHAUNCY ST/AVE DE LAFAYETTE

1995 NO BUILD AM PEAK WITH REVISED NETWORK

Date: 04-08-1969 Time: 14:50:05

1985 HCM - CHAPTER 9. SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=15AM GEOMETRICS=15AM SIGNAL=15AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	AVE DE LAFAYETTE	0	0	0	0	0	0	0	0.0	0.0	0.0	0
WB	AVE DE LAFAYETTE	0	308	24	332	0	2	0	0.0	11.0	0.0	44
NB	CHAUNCY ST	169	435	0	604	1	1	0	11.0	10.0	0.0	40
SB	CHAUNCY ST	0	0	152	152	0	0	1	0.0	0.0	14.0	36

TOTAL VOLUME = 1088

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.000	15		11.0	3
WB	0.0%	2.0%	Y	10	10	.900	180	N	11.0	3
NB	0.0%	2.0%	Y	10	20	.900	100	N	13.0	3
SB	0.0%	2.0%	N	0	25	.900	310	N	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1								*				*			*		13.2	3	A
2						*	*					*				*	14.4	3	A
3			*					*	*	*							42.4	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	0	308	24	.900	0	342	27
NB	169	435	0	.900	188	483	0
SB	0	0	152	.900	0	0	169

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
WB	TH-RT	369	2	1.05	387	0.00	0.07
NB	LT	188	1	1.00	188	1.00	0.00
NB	TH	483	1	1.00	483	0.00	0.00
SB	RT	169	1	1.00	169	0.00	1.00

CHAUNCY ST/AVE DE LAFAYETTE
1995 NO BUILD AM PEAK WITH REVISED NETWORK
date 04-08-1989 time: 14:50:06

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
NB	Th-RT	1800	2	0.967	0.990	1.000	0.925	0.979	0.900	0.978	1.000	2747
NB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1473
NB	TH	1800	1	0.933	0.990	1.000	0.849	0.917	0.900	1.000	1.000	1165
SB	RT	1800	1	1.067	0.990	1.000	1.000	0.896	0.900	0.850	1.000	1303

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
NB	Th-RT	387	2747	0.14	0.18	494	0.78	*
NB	LT	189	1473	0.13	0.53	780	0.24	
NB	Th	483	1165	0.41	0.53	617	0.78	*
SB	RT	169	1303	0.13	0.17	216	0.78	*

CYCLE= 80.0 LOST=10.0 SUM V/S CRIT= 0.69 TOTAL V/C= 0.78

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
NB	Th-RT	0.78	*	0.18	80.0	23.80	494	6.72	0.85	25.94	D	6.8	21
NB	LT	0.24		0.53	80.0	7.71	780	0.00	1.00	7.71	B	2.0	7
NB	Th	0.78	*	0.53	80.0	11.50	617	5.47	0.85	14.43	B	5.1	16
SB	RT	0.78	*	0.17	80.0	24.33	216	14.14	0.85	32.69	D	3.6	12

DIR	STREET	DELAY	LOS
NB	AVE DE LAFAYETTE	25.94	D
NB	CHAUNCY ST	12.55	B
SB	CHAUNCY ST	32.69	D

INTERSECTION DELAY = 19.55 INTERSECTION LOS=C

THE EXISTING TIMING IS OPTIMAL

CHAUNCY ST/AVE DE LAFAYETTE

1995 NO BUILD PM PEAK WITH REVISED NETWORK

Date 04-08-1989 Time. 14:54.10

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=15PM GEOMETRICS=15PM SIGNAL=15PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	AVE DE LAFAYETTE	0	0	0	0	0	0	0	0.0	0.0	0.0	0
WB	AVE DE LAFAYETTE	0	268	62	330	0	2	0	0.0	11.0	0.0	44
NB	CHAUNCY ST	71	350	0	421	1	1	0	11.0	10.0	0.0	40
SB	CHAUNCY ST	0	0	230	230	0	0	1	0.0	0.0	14.0	36

TOTAL VOLUME = 981

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.000	15		11.0	3
WB	0.0%	2.0%	Y	10	10	.900	180	N	11.0	3
NB	0.0%	2.0%	Y	10	20	.900	100	N	13.0	3
SB	0.0%	2.0%	N	0	25	.900	310	N	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1								*				*			*		20.3	3	A
2						*	*					*				*	15.1	3	A
3				*				*	*	*							34.6	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	0	268	62	.900	0	298	69
NB	71	350	0	.900	79	389	0
SB	0	0	230	.900	0	0	256

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
WB	TH-RT	367	2	1.05	385	0.00	0.19
NB	LT	79	1	1.00	79	1.00	0.00
NB	TH	389	1	1.00	389	0.00	0.00
SB	RT	256	1	1.00	256	0.00	1.00

CHAUNCY ST/AVE DE LAFAYETTE

1995 NO BUILD PM PEAK WITH REVISED NETWORK

date 04-08-1989 time. 14 54 11

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
NE	TH-RT	1800	2	0.967	0.990	1.000	0.925	0.979	0.900	0.944	1.000	2650
NE	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1473
NB	TH	1800	1	0.933	0.990	1.000	0.849	0.917	0.900	1.000	1.000	1165
SB	RT	1800	1	1.067	0.990	1.000	1.000	0.896	0.900	0.850	1.000	1303

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
NE	TH-RT	385	2650	0.15	0.19	499	0.77	*
NE	LT	79	1473	0.05	0.43	637	0.12	
NB	TH	389	1165	0.33	0.43	504	0.77	*
SB	RT	256	1303	0.20	0.25	331	0.77	*

CYCLE= 80.0 LOST=10.0 SUM V/S CRIT= 0.68 TOTAL V/C= 0.77

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CN	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
NE	TH-RT	0.77	*	0.19	80.0	23.44	499	6.13	0.85	25.13	D	6.6	21
NE	LT	0.12		0.43	80.0	10.34	637	0.00	1.00	10.34	B	1.0	4
NB	TH	0.77	*	0.43	80.0	14.69	504	6.07	0.85	17.65	C	4.9	16
SB	RT	0.77	*	0.25	80.0	21.04	331	8.94	0.85	25.48	D	4.5	14

DIR	STREET	DELAY	LOS
NE	AVE DE LAFAYETTE	25.13	D
NB	CHAUNCY ST	16.42	C
SB	CHAUNCY ST	25.48	D

INTERSECTION DELAY = 21.53 INTERSECTION LOS=C

THE EXISTING TIMING IS OPTIMAL

CHAUNCY ST/ARCH ST/SUMMER ST

1995 NO BUILD AM PEAK WITH REVISED NETWORK

Date 04-08-1989 Time. 14:56:38

1985 HCM - CHAPTER 9. SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=17AM GEOMETRICS=17AM SIGNAL=17AM

LOCATED IN C6D:Y

VOLUME & GEOMETRICS

DIR	STREET	VOLUMES LT	TH	RT	TOTAL	# OF LANES LT	TH	RT	LANE WIDTH LT	TH	RT	CROSS WALK
EB	SUMMER ST	21	47	0	68	0	1	0	0.0	10.0	0.0	30
WB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
NB	CHAUNCY ST	0	353	68	421	0	1	0	0.0	10.0	0.0	30
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	0

TOTAL VOLUME = 489

TRAFFIC & ROADWAY CONDITIONS

DIR	GRADE	%HV	ADJ PARK Y/N	MOVES	BUSES	PHF	PEDESTRIANS CROSS	BUT	MIN TIME	ARR TYPE
EB	0.0%	0.0%	Y	5	0	.960	300	Y	10.5	3
WB	0.0%	0.0%	N	0	0	.000	300	Y	10.5	0
NB	0.0%	0.0%	Y	5	0	.960	400	Y	10.5	3
SB	0.0%	0.0%	N	0	0	.000	400	Y	10.5	0

PHASINGS

	EASTBOUND l	t	r	p	WESTBOUND l	t	r	p	NORTHBOUND l	t	r	p	SOUTHBOUND l	t	r	p	GREEN	Y+R	PRE/ACT
1				*				*		*	*						44.3	4	A
2	*	*										*				*	7.7	4	A

CYCLE= 60.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	21	47	0	.960	22	49	0
WB	0	0	0	.000	0	0	0
NB	0	353	68	.960	0	368	71
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
EB	LT-TH	71	1	1.00	71	0.31	0.00
NB	TH-RT	439	1	1.00	439	0.00	0.16

CHAUNCY ST/ARCH ST/SUMMER ST
1995 NO BUILD AM PEAK WITH REVISED NETWORK
date: 04-08-1989 time: 14.56.39

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH	1800	1	0.933	0.990	1.000	0.875	1.000	0.900	1.000	0.799	1047
NB	TH-RT	1800	1	0.933	0.990	1.000	0.875	1.000	0.900	0.855	1.000	1119

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH	71	1047	0.07	0.13	134	0.53	*
NB	TH-RT	439	1119	0.39	0.74	827	0.53	*

CYCLE= 60.0 LOST= 8.0 SUM V/S CRIT= 0.46 TOTAL V/C= 0.53

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CN	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH	0.53	*	0.13	60.0	18.61	134	1.32	0.85	16.94	C	1.0	4
NB	TH-RT	0.53	*	0.74	60.0	2.55	827	0.21	0.85	2.35	A	1.9	7

DIR	STREET	DELAY	LOS
EB	SUMMER ST	16.94	C
NB	CHAUNCY ST	2.35	A

INTERSECTION DELAY = 4.38 INTERSECTION LOS=A

THE EXISTING TIMING IS OPTIMAL

CHAUNCY ST/ARCH ST/SUMMER ST

1995 NO BUILD PM PEAK WITH REVISED NETWORK

Date 04-06-1989 Time. 14:59:49

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=17PM GEOMETRICS=17PM SIGNAL=17PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	SUMMER ST	46	96	0	142	0	1	0	0.0	10.0	0.0	30
WB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
NB	CHAUNCY ST	0	324	107	431	0	1	0	0.0	10.0	0.0	30
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	0

TOTAL VOLUME = 573

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	Y	5	0	.860	375	Y	10.5	3
WB	0.0%	0.0%	N	0	0	.000	375	Y	10.5	0
NB	0.0%	2.0%	Y	5	0	.860	500	Y	10.5	3
SB	0.0%	0.0%	N	0	0	.000	500	Y	10.5	0

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1				*				*		*	*						38.6	4	A
2	*	*										*				*	13.4	4	A

CYCLE= 60.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	46	96	0	.860	53	112	0
WB	0	0	0	.000	0	0	0
NB	0	324	107	.860	0	377	124
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT-TH	165	1	1.00	165	0.32	0.00
NB	TH-RT	501	1	1.00	501	0.00	0.25

CHAUNCY ST/ARCH ST/SUMMER ST

1995 NO BUILD PM PEAK WITH REVISED NETWORK

date: 04-08-1989 time: 14.59.50

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH	1800	1	0.933	0.990	1.000	0.875	1.000	0.900	1.000	0.779	1020
NB	TH-RT	1800	1	0.933	0.990	1.000	0.875	1.000	0.900	0.822	1.000	1076

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH	165	1020	0.16	0.22	228	0.72	*
NB	TH-RT	501	1076	0.47	0.64	692	0.72	*

CYCLE= 60.0 LOST= 8.0 SUM V/S CRIT= 0.63 TOTAL V/C= 0.72

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH	0.72	*	0.22	60.0	16.40	228	9.00	0.85	21.59	C	2.4	8
NB	TH-RT	0.72	*	0.64	60.0	5.44	692	3.14	0.85	7.29	B	3.0	10

DIR	STREET	DELAY	LOS
EB	SUMMER ST	21.59	C
NB	CHAUNCY ST	7.29	B

INTERSECTION DELAY = 10.84 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

CHAUNCY ST/AVE DE LAFAYETTE

1995 NO BUILD SAT PEAK WITH REVISED NETWORK

Date 04-08-1989 Time. 15:01:43

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=15SAT GEOMETRICS=15SAT SIGNAL=15SAT

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	AVE DE LAFAYETTE	0	0	0	0	0	0	0	0.0	0.0	0.0	0
WB	AVE DE LAFAYETTE	0	206	19	225	0	2	0	0.0	11.0	0.0	44
NB	CHAUNCY ST	87	343	0	430	1	1	0	11.0	10.0	0.0	40
SB	CHAUNCY ST	0	0	183	183	0	0	1	0.0	0.0	14.0	36

TOTAL VOLUME = 838

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.000	15		11.0	3
WB	0.0%	2.0%	Y	10	10	.900	180	N	11.0	3
NB	0.0%	2.0%	Y	10	20	.900	100	N	13.0	3
SB	0.0%	2.0%	N	0	25	.900	310	N	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1								*				*			*		18.9	3	A
2						*	*					*				*	11.6	3	A
3			*					*	*	*							39.5	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	0	206	19	.900	0	229	21
NB	87	343	0	.900	97	381	0
SB	0	0	183	.900	0	0	203

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
WB	TH-RT	250	2	1.05	263	0.00	0.08
NB	LT	97	1	1.00	97	1.00	0.00
NB	TH	381	1	1.00	381	0.00	0.00
SB	RT	203	1	1.00	203	0.00	1.00

CHAUNCY ST/AVE DE LAFAYETTE

1995 NO BUILD SAT PEAK WITH REVISED NETWORK

date. 04-08-1989 time 15:01:44

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	TH-RT	1800	2	0.967	0.990	1.000	0.925	0.979	0.900	0.975	1.000	2737
NB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1473
NB	TH	1800	1	0.933	0.990	1.000	0.849	0.917	0.900	1.000	1.000	1165
SB	RT	1800	1	1.067	0.990	1.000	1.000	0.896	0.900	0.850	1.000	1303

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	TH-RT	263	2737	0.10	0.14	397	0.66	*
NB	LT	97	1473	0.07	0.49	728	0.13	
NB	TH	361	1165	0.33	0.49	576	0.66	*
SB	RT	203	1303	0.16	0.24	307	0.66	*

CYCLE= 80.0 LOST=10.0 SUM V/S CRIT= 0.58 TOTAL V/C= 0.66

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	TH-RT	0.66	*	0.14	80.0	24.58	397	3.25	0.85	23.66	C	4.8	15
NB	LT	0.13		0.49	80.0	8.32	728	0.00	1.00	8.32	B	1.1	4
NB	TH	0.66	*	0.49	80.0	11.56	576	2.26	0.85	11.74	B	4.3	14
SB	RT	0.66	*	0.24	80.0	21.04	307	4.16	0.85	21.42	C	3.5	11

DIR	STREET	DELAY	LOS
WB	AVE DE LAFAYETTE	23.66	C
NB	CHAUNCY ST	11.05	B
SB	CHAUNCY ST	21.42	C

INTERSECTION DELAY = 16.79 INTERSECTION LOS=C

THE EXISTING TIMING IS OPTIMAL

CHAUNCY ST/ARCH ST/SUMMER ST

1995 NO BUILD SAT PEAK WITH REVISED NETWORK

Date: 04-08-1989 Time: 15:04:38

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=17SAT GEOMETRICS=17SAT SIGNAL=17SAT

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	SUMMER ST	61	126	0	187	0	1	0	0.0	10.0	0.0	30
WB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
NB	CHAUNCY ST	0	269	113	382	0	1	0	0.0	10.0	0.0	30
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	0

TOTAL VOLUME = 569

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	Y	5	0	.910	375	Y	10.5	3
WB	0.0%	0.0%	N	0	0	.000	375	Y	10.5	0
NB	0.0%	2.0%	Y	5	0	.910	500	Y	10.5	3
SB	0.0%	0.0%	N	0	0	.000	500	Y	10.5	0

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1				*				*		*	*						34.5	4	A
2	*	*										*				*	17.5	4	A

CYCLE= 60.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	61	126	0	.910	67	138	0
WB	0	0	0	.000	0	0	0
NB	0	269	113	.910	0	296	124
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
EB	LT-TH	205	1	1.00	205	0.33	0.00
NB	TH-RT	420	1	1.00	420	0.00	0.30

CHAUNCY ST/ARCH ST/SUMMER ST

1995 NO BUILD SAT PEAK WITH REVISED NETWORK

date: 04-08-1989 time 15:04:39

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH	1800	1	0.933	0.990	1.000	0.875	1.000	0.900	1.000	0.778	1019
NB	TH-RT	1800	1	0.933	0.990	1.000	0.875	1.000	0.900	0.807	1.000	1057

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH	205	1019	0.20	0.29	297	0.69	*
NB	TH-RT	420	1057	0.40	0.57	607	0.69	*

CYCLE= 60.0 LOST= 8.0 SUM V/S CRIT= 0.60 TOTAL V/C= 0.69

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH	0.69	*	0.29	60.0	14.32	297	5.48	0.85	16.83	C	2.5	8
NB	TH-RT	0.69	*	0.57	60.0	6.84	607	2.75	0.85	8.15	B	3.0	10

DIR	STREET	DELAY	LOS
EB	SUMMER ST	16.83	C
NB	CHAUNCY ST	8.15	B

INTERSECTION DELAY = 11.00 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

KINGSTON ST/OTIS ST/SUMMER ST
1995 NO BUILD AM PEAK WITH REVISED NETWORK
Date: 04-08-1989 Time: 15:07:27

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=20AM GEOMETRICS=20AM SIGNAL=20AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	SUMMER ST	0	57	57	114	0	1	1	0.0	10.0	10.0	25
WB	SUMMER ST	96	0	0	96	1	0	0	10.0	0.0	0.0	32
NB	KINGSTON ST	0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	OTIS ST	56	177	0	233	1	1	0	10.0	10.0	0.0	25

TOTAL VOLUME = 443

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	Y	10	0	.880	400	N	11.0	3
WB	0.0%	2.0%	N	0	0	.880	400	N	11.0	3
NB	0.0%	0.0%	N	0	0	.000	0		9.3	3
SB	0.0%	2.0%	N	0	0	.880	400	N	9.3	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1		*	*		*							*				*	26.4	4	A
2				*				*					*	*			43.6	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	57	57	.880	0	65	65
WB	96	0	0	.880	109	0	0
NB	0	0	0	.000	0	0	0
SB	56	177	0	.880	64	201	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	TH	65	1	1.00	65	0.00	0.00
EB	RT	65	1	1.00	65	0.00	1.00
WB	LT	109	1	1.00	109	1.00	0.00
SB	LT	64	1	1.00	64	1.00	0.00
SB	TH	201	1	1.00	201	0.00	0.00

KINGSTON ST/OTIS ST/SUMMER ST
1995 NO BUILD AM PEAK WITH REVISED NETWORK
date: 04-08-1989 time: 15:07:28

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH	1800	1	0.933	0.990	1.000	1.000	1.000	0.900	1.000	1.000	1497
EB	RT	1800	1	0.933	0.990	1.000	0.849	1.000	0.900	0.850	1.000	1080
WB	LT	1800	1	0.933	0.990	1.000	1.000	1.000	0.900	1.000	0.832	1246
SB	LT	1800	1	0.933	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1422
SB	TH	1800	1	0.933	0.990	1.000	1.000	1.000	0.900	1.000	1.000	1497

SUPPLEMENTAL WORKSHEET FOR
LEFT-TURN ADJUSTMENT FACTOR FLT
INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	No	Vo	Plto	LGo
WB	80	28	1	109	0	109	1.00	1	65	0.00	0

CALCULATIONS

DIR	Sop	Yo	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
WB	1800	0.036	26.483	0.835	1.000	1.926	0.000	0.000	1.348	0.832	0.832

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH	65	1497	0.04	0.36	532	0.12	
EB	RT	65	1080	0.06	0.36	384	0.17	
WB	LT	109	1246	0.09	0.36	442	0.25	*
SB	LT	64	1422	0.04	0.54	775	0.08	
SB	TH	201	1497	0.13	0.54	816	0.25	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.22 TOTAL V/C= 0.25

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH	0.12		0.36	80.0	13.21	532	0.00	0.85	11.23	B	0.9	4
EB	RT	0.17		0.36	80.0	13.45	384	0.00	0.85	11.43	B	0.9	4
WB	LT	0.25	*	0.36	80.0	13.86	442	0.00	0.85	11.78	B	1.6	6
SB	LT	0.08		0.54	80.0	6.59	775	0.00	1.00	6.59	B	0.6	3
SB	TH	0.25	*	0.54	80.0	7.27	816	0.00	0.85	6.18	B	2.0	7

DIR	STREET	DELAY	LOS
EB	SUMMER ST	11.33	B
WB	SUMMER ST	11.78	B
SB	OTIS ST	6.28	B

INTERSECTION DELAY = 8.77 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

KINGSTON ST/OTIS ST/SUMMER ST

1995 NO BUILD PM PEAK WITH REVISED NETWORK

Date: 04-08-1989 Time. 15:11:13

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=20PM GEOMETRICS=20PM SIGNAL=20PM

LOCATED IN C8D:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	SUMMER ST	0	113	91	204	0	1	1	0.0	10.0	10.0	25
WB	SUMMER ST	92	0	0	92	1	0	0	10.0	0.0	0.0	32
NB	KINGSTON ST	0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	OTIS ST	95	371	0	466	1	1	0	10.0	10.0	0.0	25

TOTAL VOLUME = 762

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	Y	10	0	.980	400	N	11.0	3
WB	0.0%	2.0%	N	0	0	.980	400	N	11.0	3
NB	0.0%	0.0%	N	0	0	.000	0		9.3	3
SB	0.0%	2.0%	N	0	0	.980	400	N	9.3	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1		*	*		*							*				*	18.3	4	A
2				*				*					*	*			53.7	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	113	91	.980	0	115	93
WB	92	0	0	.980	94	0	0
NB	0	0	0	.000	0	0	0
SB	95	371	0	.980	97	379	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	TH	115	1	1.00	115	0.00	0.00
EB	RT	93	1	1.00	93	0.00	1.00
WB	LT	94	1	1.00	94	1.00	0.00
SB	LT	97	1	1.00	97	1.00	0.00
SB	TH	379	1	1.00	379	0.00	0.00

KINGSTON ST/OTIS ST/SUMMER ST
1995 NO BUILD PM PEAK WITH REVISED NETWORK
date: 04-08-1989 time. 15:11:14

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH	1800	1	0.933	0.990	1.000	1.000	1.000	0.900	1.000	1.000	1497
EB	RT	1800	1	0.933	0.990	1.000	0.849	1.000	0.900	0.850	1.000	1080
WB	LT	1800	1	0.933	0.990	1.000	1.000	1.000	0.900	1.000	0.768	1149
SB	LT	1800	1	0.933	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1422
SB	TH	1800	1	0.933	0.990	1.000	1.000	1.000	0.900	1.000	1.000	1497

SUPPLEMENTAL WORKSHEET FOR
LEFT-TURN ADJUSTMENT FACTOR FLT
INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	No	Vo	Plto	LGo
WB	80	18	1	94	0	94	1.00	1	115	0.00	0

CALCULATIONS

DIR	Sop	Yo	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
WB	1800	0.064	14.039	0.803	1.000	4.225	0.000	0.000	1.401	0.768	0.768

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH	115	1497	0.08	0.23	342	0.34	
EB	RT	93	1080	0.09	0.23	247	0.38	*
WB	LT	94	1149	0.08	0.23	262	0.36	
SB	LT	97	1422	0.07	0.67	955	0.10	
SB	TH	379	1497	0.25	0.67	1006	0.38	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.34 TOTAL V/C= 0.38

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH	0.34		0.23	80.0	19.61	342	0.00	0.85	16.67	C	2.0	7
EB	RT	0.38	*	0.23	80.0	19.81	247	0.00	0.85	16.84	C	1.6	6
WB	LT	0.36		0.23	80.0	19.71	262	0.00	0.85	16.76	C	1.6	6
SB	LT	0.10		0.67	80.0	3.52	955	0.00	1.00	3.52	A	0.7	3
SB	TH	0.38	*	0.67	80.0	4.39	1006	0.00	0.85	3.73	A	2.8	9

DIR	STREET	DELAY	LOS
EB	SUMMER ST	16.74	C
WB	SUMMER ST	16.76	C
SB	OTIS ST	3.68	A

INTERSECTION DELAY = 6.76 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

SURFACE ARTERY/LINCOLN ST/ESSEX ST

1995 NO BUILD PM PEAK WITH REVISED NETWORK

Date: 04-06-1989 Time: 15:26:57

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=21PM GEOMETRICS=21PM SIGNAL=21PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	ESSEX ST	153	872	192	1217	0	3	0	0.0	12.0	0.0	52
WB	LINCOLN ST	141	468	12	621	0	2	0	0.0	12.0	0.0	30
NB	SURFACE ARTERY	67	713	13	793	0	3	0	0.0	11.0	0.0	56
SB	SURFACE ARTERY	36	1330	129	1495	0	3	0	0.0	12.0	0.0	66

TOTAL VOLUME = 4126

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.940	15	Y	16.0	3
WB	0.0%	2.0%	Y	10	10	.940	180	Y	16.0	3
NB	0.0%	2.0%	N	0	20	.940	100	Y	15.5	3
SB	0.0%	2.0%	N	0	25	.940	310	Y	15.5	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*	*	*									*				*	31.0	4	A
2				*				*	*	*	*		*	*	*		52.8	4	A
3					*	*	*					*				*	24.2	4	A

CYCLE= 120.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	153	872	192	.940	163	928	204
WB	141	468	12	.940	150	498	13
NB	67	713	13	.940	71	759	14
SB	36	1330	129	.940	38	1415	137

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
EB	LT-TH-RT	1295	3	1.10	1424	0.13	0.16
WB	LT-TH-RT	661	2	1.05	694	0.23	0.02
NB	LT-TH-RT	844	3	1.10	928	0.08	0.02
SB	LT-TH-RT	1590	3	1.10	1749	0.02	0.09

SURFACE ARTERY/LINCOLN ST/ESSEX ST
1995 NO BUILD PM PEAK WITH REVISED NETWORK
date 04-08-1989 time. 15:26:58

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH-RT	1800	3	1.000	0.990	1.000	1.000	0.986	0.900	0.969	0.963	4425
WB	LT-TH-RT	1800	2	1.000	0.990	1.000	0.925	0.979	0.900	0.994	0.955	2758
NB	LT-TH-RT	1800	3	0.967	0.990	1.000	1.000	0.972	0.900	0.996	0.692	3117
SB	LT-TH-RT	1800	3	1.000	0.990	1.000	1.000	0.965	0.900	0.986	0.696	3187

SUPPLEMENTAL WORKSHEET FOR
LEFT-TURN ADJUSTMENT FACTOR FLT
INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	No	Vo	Plto	LGo
NB	120	53	3	844	844	71	0.08	3	1399	0.02	0
SB	120	53	3	1590	1399	38	0.02	3	844	0.08	0

CALCULATIONS

DIR	Sop	Yo	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
NB	5124	0.273	27.604	0.001	1.000	25.226	0.000	0.000	1800.000	0.076	0.692
SB	35	1.000	0.000	0.348	0.589	52.830	0.411	1.393	3.235	0.087	0.696

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH-RT	1424	4425	0.32	0.26	1142	1.25	*
WB	LT-TH-RT	694	2755	0.25	0.20	556	1.25	*
NB	LT-TH-RT	928	3117	0.30	0.44	1372	0.68	
SB	LT-TH-RT	1749	3187	0.55	0.44	1403	1.25	*

CYCLE=120.0 LOST=12.0 SUM V/S CRIT= 1.12 TOTAL V/C= 1.25

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH-RT	1.25	*	0.26	120.0	37.01	1142	92.30	0.85	109.92	F	67.4	203
WB	LT-TH-RT	1.25	*	0.20	120.0	38.83	556	98.56	0.85	116.78	F	36.7	111
NB	LT-TH-RT	0.68		0.44	120.0	20.34	1372	1.09	0.85	18.22	C	15.7	48
SB	LT-TH-RT	1.25	*	0.44	120.0	31.68	1403	91.06	0.85	104.33	F	74.8	225

DIR	STREET	DELAY	LOS
EB	ESSEX ST	109.92	F
WB	LINCOLN ST	116.78	F
NB	SURFACE ARTERY	18.22	C
SB	SURFACE ARTERY	104.33	F

INTERSECTION DELAY = 91.13 INTERSECTION LOS=F

THE EXISTING TIMING IS OPTIMAL

SURFACE ARTERY/LINCOLN ST/ESSEX ST

1995 NO BUILD AM PEAK WITH REVISED NETWORK

Date: 04-08-1989 Time: 15:29:41

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=21AM GEOMETRICS=21AM SIGNAL=21AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	ESSEX ST	131	641	68	840	0	3	0	0.0	12.0	0.0	52
WB	LINCOLN ST	193	1268	33	1494	0	3	0	0.0	12.0	0.0	30
NB	SURFACE ARTERY	128	512	19	659	0	3	0	0.0	11.0	0.0	56
SB	SURFACE ARTERY	74	733	216	1023	0	3	0	0.0	12.0	0.0	66

TOTAL VOLUME = 4016

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.870	30	Y	16.0	3
WB	0.0%	2.0%	N	10	10	.870	200	Y	16.0	3
NB	0.0%	2.0%	N	0	20	.870	90	Y	15.5	3
SB	0.0%	2.0%	N	0	25	.870	380	Y	15.5	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*	*	*									*				*	24.4	4	A
2				*				*	*	*	*		*	*	*		41.6	4	A
3					*	*	*					*				*	41.9	4	A

CYCLE= 120.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	131	641	68	.870	151	737	78
WB	193	1268	33	.870	222	1457	38
NB	128	512	19	.870	147	589	22
SB	74	733	216	.870	85	843	248

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT-TH-RT	966	3	1.10	1062	0.16	0.08
WB	LT-TH-RT	1717	3	1.10	1889	0.13	0.02
NB	LT-TH-RT	757	3	1.10	833	0.19	0.03
SB	LT-TH-RT	1176	3	1.10	1293	0.07	0.21

SURFACE ARTERY/LINCOLN ST/ESSEX ST

1995 NO BUILD AM PEAK WITH REVISED NETWORK

date. 04-06-1989 time. 15:29.42

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH-RT	1800	3	1.000	0.990	1.000	1.000	0.986	0.900	0.984	0.948	4430
WB	LT-TH-RT	1800	3	1.000	0.990	1.000	1.000	0.986	0.900	0.993	0.975	4593
NB	LT-TH-RT	1800	3	0.967	0.990	1.000	1.000	0.972	0.900	0.993	0.715	3209
SB	LT-TH-RT	1800	3	1.000	0.990	1.000	1.000	0.965	0.900	0.965	0.706	3167

SUPPLEMENTAL WORKSHEET FOR

LEFT-TURN ADJUSTMENT FACTOR FLT

INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	No	Vo	Plto	LGo
NB	120	42	3	757	757	147	0.19	3	1176	0.07	0
SB	120	42	3	1176	1176	85	0.07	3	757	0.19	0

CALCULATIONS

DIR	Sop	Yo	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
NB	4777	0.246	16.042	0.140	1.000	25.587	0.000	0.000	8.031	0.144	0.715
SB	2263	0.332	2.706	0.402	1.000	38.921	0.000	0.000	2.801	0.119	0.706

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH-RT	1062	4430	0.24	0.20	902	1.18	*
WB	LT-TH-RT	1889	4593	0.41	0.35	1605	1.18	*
NB	LT-TH-RT	833	3209	0.26	0.35	1113	0.75	
SB	LT-TH-RT	1293	3167	0.41	0.35	1099	1.18	*

CYCLE=120.0 LOST=12.0 SUM V/S CRIT= 1.06 TOTAL V/C= 1.18

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH-RT	1.18	*	0.20	120.0	38.03	902	71.34	0.85	92.97	F	45.2	136
WB	LT-TH-RT	1.18	*	0.35	120.0	32.78	1605	67.27	0.85	85.05	F	71.4	215
NB	LT-TH-RT	0.75		0.35	120.0	26.27	1113	2.39	0.85	24.36	C	16.5	50
SB	LT-TH-RT	1.18	*	0.35	120.0	32.87	1099	69.75	0.85	87.23	F	49.8	150

DIR	STREET	DELAY	LOS
EB	ESSEX ST	92.97	F
WB	LINCOLN ST	85.05	F
NB	SURFACE ARTERY	24.36	C
SB	SURFACE ARTERY	87.23	F

INTERSECTION DELAY = 77.30 INTERSECTION LOS=F

THE EXISTING TIMING IS OPTIMAL

KINGSTON ST/AVE DE LAFAYETTE/ESSEX ST
1995 NO BUILD AM PEAK WITH REVISED NETWORK
Date 04-08-1989 Time: 15:32:25

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=18AM GEOMETRICS=18AM SIGNAL=18AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	ESSEX ST	0	646	36	682	0	2	0	0.0	12.0	0.0	60
WB	ESSEX ST	0	296	0	296	0	2	0	0.0	12.0	0.0	60
NB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	56
SB	KINGSTON ST	272	104	35	411	0	2	0	0.0	12.0	0.0	30

TOTAL VOLUME = 1389

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.870	300	Y	18.0	3
WB	0.0%	2.0%	N	10	10	.870	200	Y	18.0	3
NB	0.0%	0.0%	N	0	0	.000	90	Y	17.0	3
SB	0.0%	2.0%	N	0	10	.870	380	Y	17.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1				*				*					*	*	*		30.4	4	A
2		*	*			*						*				*	41.6	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	646	36	.870	0	743	41
WB	0	296	0	.870	0	340	0
NB	0	0	0	.000	0	0	0
SB	272	104	35	.870	313	120	40

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	TH-RT	784	2	1.05	823	0.00	0.05
WB	TH	340	2	1.05	357	0.00	0.00
SB	LT-TH-RT	472	2	1.05	496	0.66	0.09

KINGSTON ST/AVE DE LAFAYETTE/ESSEX ST
1995 NO BUILD AM PEAK WITH REVISED NETWORK
date. 04-08-1989 time: 15.32:26

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH-RT	1800	2	1.000	0.990	1.000	1.000	0.979	0.900	0.990	1.000	3109
WB	TH	1800	2	1.000	0.990	1.000	1.000	0.979	0.900	1.000	1.000	3141
SB	LT-TH-RT	1800	2	1.000	0.990	1.000	1.000	0.979	0.900	0.975	0.838	2566

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH-RT	823	3109	0.26	0.52	1617	0.51	*
WB	TH	357	3141	0.11	0.52	1634	0.22	
SB	LT-TH-RT	496	2566	0.19	0.38	975	0.51	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.46 TOTAL V/C= 0.51

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH-RT	0.51	*	0.52	80.0	9.52	1617	0.03	0.85	8.12	B	8.4	26
WB	TH	0.22		0.52	80.0	7.90	1634	0.00	0.85	6.71	B	3.6	12
SB	LT-TH-RT	0.51	*	0.38	80.0	14.49	975	0.05	0.85	12.36	B	6.5	20

DIR	STREET	DELAY	LOS
EB	ESSEX ST	8.12	B
WB	ESSEX ST	6.71	B
SB	KINGSTON ST	12.36	B

INTERSECTION DELAY = 9.08 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

ESSEX ST/KINGSTON ST/AVE DE LAFAYETTE
1995 NO BUILD PM PEAK WITH REVISED NETWORK
Date: 04-06-1989 Time: 15:34:44

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=18PM GEOMETRICS=18PM SIGNAL=18PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	ESSEX ST	0	1037	121	1158	0	2	0	0.0	12.0	0.0	60
WB	ESSEX ST	0	235	0	235	0	2	0	0.0	12.0	0.0	60
NB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	56
SB	KINGSTON ST	470	345	94	909	0	2	0	0.0	12.0	0.0	30

TOTAL VOLUME = 2302

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.870	300	Y	18.0	3
WB	0.0%	2.0%	N	10	10	.870	200	Y	18.0	3
NB	0.0%	0.0%	N	0	0	.000	90	Y	17.0	3
SB	0.0%	2.0%	N	0	10	.870	380	Y	17.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1				*				*					*	*	*		34.3	4	A
2		*	*			*						*				*	37.7	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	1037	121	.870	0	1192	139
WB	0	235	0	.870	0	270	0
NB	0	0	0	.000	0	0	0
SB	470	345	94	.870	540	397	108

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
EB	TH-RT	1331	2	1.05	1398	0.00	0.10
WB	TH	270	2	1.05	284	0.00	0.00
SB	LT-TH-RT	1045	2	1.05	1097	0.52	0.10

ESSEX ST/KINGSTON ST/AVE DE LAFAYETTE
1995 NO BUILD PM PEAK WITH REVISED NETWORK
date: 04-08-1989 time: 15:34:45

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH-RT	1800	2	1.000	0.990	1.000	1.000	0.979	0.900	0.980	1.000	3078
WB	TH	1800	2	1.000	0.990	1.000	1.000	0.979	0.900	1.000	1.000	3141
SB	LT-TH-RT	1800	2	1.000	0.990	1.000	1.000	0.979	0.900	0.970	0.873	2660

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH-RT	1398	3078	0.45	0.47	1452	0.96	*
WB	TH	284	3141	0.09	0.47	1481	0.19	
SB	LT-TH-RT	1097	2660	0.41	0.43	1139	0.95	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.87 TOTAL V/C= 0.96

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH-RT	0.96	*	0.47	80.0	15.55	1452	12.19	0.85	23.58	C	19.1	58
WB	TH	0.19		0.47	80.0	9.33	1481	0.00	0.85	7.93	B	3.2	10
SB	LT-TH-RT	0.96	*	0.43	80.0	16.91	1139	14.32	0.85	26.54	D	16.6	51

DIR	STREET	DELAY	LOS
EB	ESSEX ST	23.58	C
WB	ESSEX ST	7.93	B
SB	KINGSTON ST	26.54	D

INTERSECTION DELAY = 23.15 INTERSECTION LOS=C

THE EXISTING TIMING IS OPTIMAL

CINCH PROGRAM VERSION DATE 4-29-1998
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:04-09-1998 TIME:16:58:07
HARRISON/BEACH 1995 NO BUILD PM PEAK REVISED NETWORK

LAST DATASETS LOADED OR SAVED
VOLUME=12AM GEOMETRICS=12AM

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KEY    D
       |
     A- -E
       |
       C
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GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000. YES
CONTROLS. FROM C: STOP
FROM D: YIELD
PREVAILING SPEED. 30 MPH
MAIN STREET # OF LANES. 4 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: NO
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH C: WB BEACH
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH: D: EB BEACH
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: NB HARRISON	B: SB HARRISON	C: WB BEACH	D: EB BEACH
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A: NB HARRISON			B: SB HARRISON			C: WB BEACH			D: EB BEACH		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	0	0	1	0	198	147	72	36	0	0	0	1
PHF	0.88			0.88			0.88			0.88		
ADJ VOLUME	0	0	1	0	225	167	82	41	0	0	0	1
PERCENT GRADE	0.00			0.00			0.00					
PASS CAR/HR	0			0			90	45	0	0	0	1

STEP 1 RIGHT TURNS FROM	C:WB BEACH	D:EB BEACH
CONFLICTING FLOWS	1	196
CRITICAL GAPS	5.0	4.5
CAPACITY	1199	1099
CAPACITY USED	0%	0%
IMPEDANCE FACTOR	1.00	1.00
ACTUAL CAPACITY	1199	1099

1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:04-09-1989 TIME:16:58:07
HARRISON/EEACH 1995 NO BUILD PM PEAK REVISED NETWORK

STEP 2 LEFT TURNS FROM	B:SE HARRISON	A:NB HARRISON
CONFLICTING FLOWS	1	392
CRITICAL GAPS	5.5	5.5
CAPACITY	1106	711
CAPACITY USED	0%	0%
IMPEDANCE FACTOR	1.00	1.00
ACTUAL CAPACITY	1106	711

STEP 3 THRU MOVES FROM	C:WB BEACH	D:EB BEACH
CONFLICTING FLOWS	393	310
CRITICAL GAPS	6.5	6.0
CAPACITY	567	704
CAPACITY USED	8%	0%
IMPEDANCE FACTOR	0.95	1.00
ACTUAL CAPACITY	567	704

STEP 4 LEFT TURNS FROM	C:WB BEACH	D:EB BEACH
CONFLICTING FLOWS	394	351
CRITICAL GAPS	7.0	6.5
CAPACITY	509	601
ACTUAL CAPACITY	509	573

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
ALL MOVES FROM C.	135	527	392	B	9.19	0.34
ALL MOVES FROM D.	1	1099	1098	A	3.28	0.00

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:04-09-1989 TIME:17:02:05
BEACH/HARRISON 1995 NO BUILD PM PEAK REVISED NETWORK

LAST DATASETS LOADED OR SAVED
VOLUME=12PM GEOMETRICS=12PM
KEY: D

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A- -B
  |
  C
```

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS: FROM C: STOP
FROM D: YIELD
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 4 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: NO
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH C: WE BEACH
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH D EB BEACH
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: NB HARRISON	B: SB HARRISON	C: WB BEACH	D: EB BEACH
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A NB HARRISON			B: SB HARRISON			C: WB BEACH			D: EB BEACH		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	0	0	1	0	388	106	154	77	0	0	0	1
PHF	0.92			0.92			0.92			0.92		
ADJ VOLUME	0	0	1	0	422	115	167	84	0	0	0	1
PERCENT GRADE	0.00			0.00			0.00					
PASS CAR/HR	0			0			184	92	0	0	0	1

STEP 1 RIGHT TURNS FROM	C:WB BEACH	D:EB BEACH
CONFLICTING FLOWS	1	268
CRITICAL GAPS	5.0	4.5
CAPACITY	1199	1028
CAPACITY USED	0%	0%
IMPEDANCE FACTOR	1.00	1.00
ACTUAL CAPACITY	1199	1028

1995 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE.04-09-1989 TIME:17:02:05
BEACH/HARRISON 1995 NO BUILD PM PEAK REVISED NETWORK

STEP 2 LEFT TURNS FROM	B:SB HARRISON	A:NB HARRISON
CONFLICTING FLOWS	1	537
CRITICAL GAPS	5.5	5.5
CAPACITY	1106	598
CAPACITY USED	0%	0%
IMPEDANCE FACTOR	1.00	1.00
ACTUAL CAPACITY	1106	598

STEP 3 THRU MOVES FROM	C:WB BEACH	D:EB BEACH
CONFLICTING FLOWS	538	480
CRITICAL GAPS	6.5	6.0
CAPACITY	461	565
CAPACITY USED	20%	0%
IMPEDANCE FACTOR	0.86	1.00
ACTUAL CAPACITY	461	565

STEP 4 LEFT TURNS FROM	C:WB BEACH	D:EB BEACH
CONFLICTING FLOWS	539	564
CRITICAL GAPS	7.0	6.5
CAPACITY	406	444
ACTUAL CAPACITY	407	382

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
ALL MOVES FROM C:	276	424	148	D	24.37	1.87
ALL MOVES FROM D:	1	1028	1026	A	3.51	0.00

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:04-09-1989 TIME:17:12:51
ESSEX/HARRISON 1995 NO BUILD AM PEAK WITH REVISED NETWORK

LAST DATASETS LOADED OR SAVED
VOLUME=13AM GEOMETRICS=13AM
KEY: D

A- -B
:
C

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS: FROM C: YIELD
FROM D: STOP
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 2 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE YES
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH: C NB HARRISON
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH: D: SB HARRISON
EXCLUSIVE LEFT TURN LANES: YES
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: EB ESSEX	B: WB ESSEX	C: NB HARRISON	D: SB HARRISON
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A: EB ESSEX			B: WB ESSEX			C: NB HARRISON			D: SB HARRISON		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	591	648	302	0	0	1	0	0	1	41	43	0
PHF	0.91			0.91			0.91			0.91		
ADJ VOLUME	649	712	332	0	0	1	0	0	1	45	47	0
PERCENT GRADE	0.00			0.00			0.00					
PASS CAR/HR	714			0			0	0	1	50	52	0

STEP 1 RIGHT TURNS FROM	C:NB HARRISON	D:SB HARRISON
CONFLICTING FLOWS	356	1
CRITICAL GAPS	4.5	5.0
CAPACITY	946	1199
CAPACITY USED	0%	0%
IMPEDANCE FACTOR	1.00	1.00
ACTUAL CAPACITY	946	1199

1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:04-09-1989 TIME:17:12:51
ESSEX/HARRISON 1995 NO BUILD AM PEAK WITH REVISED NETWORK

STEP 2 LEFT TURNS FROM	B:WB ESSEX	A:EB ESSEX
CONFLICTING FLOWS	712	1
CRITICAL GAPS	5.0	5.0
CAPACITY	562	1199
CAPACITY USED	0%	60%
IMPEDANCE FACTOR	1.00	0.48
ACTUAL CAPACITY	562	1199

STEP 3 THRU MOVES FROM	C:NB HARRISON	D:SB HARRISON
CONFLICTING FLOWS	1363	1362
CRITICAL GAPS	5.5	6.0
CAPACITY	196	156
CAPACITY USED	0%	33%
IMPEDANCE FACTOR	1.00	0.74
ACTUAL CAPACITY	93	74

STEP 4 LEFT TURNS FROM	C:NB HARRISON	D:SB HARRISON
CONFLICTING FLOWS	1410	1363
CRITICAL GAPS	6.0	6.5
CAPACITY	144	125
ACTUAL CAPACITY	51	59

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM A:	714	1199	484	A	7.43	1.47
ALL MOVES FROM C:	1	946	945	A	3.81	0.00
LT FROM D:	50	59	10	E	364.48	5.02
SHARED TH/RT FROM D:	52	74	22	E	161.06	2.33

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:04-09-1989 TIME:17:14:07
ESSEX/HARRISON 1995 NO BUILD PM PEAK WITH REVISED NETWORK

LAST DATASETS LOADED OR SAVED
VOLUME=13PM GEOMETRICS=13PM

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KEY:   D
       |
     A- -B
       |
       C
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GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS: FROM C: YIELD
FROM D: STOP
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 2 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: YES
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH: C: NB HARRISON
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH: D: SB HARRISON
EXCLUSIVE LEFT TURN LANES: YES
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: EB ESSEX	B: WB ESSEX	C: NB HARRISON	D: SB HARRISON
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A: EB ESSEX			B: WB ESSEX			C: NB HARRISON			D: SB HARRISON		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	400	1088	373	0	0	1	0	0	1	92	121	0
PHF	0.91			0.91			0.91			0.91		
ADJ VOLUME	440	1196	410	0	0	1	0	0	1	101	133	0
PERCENT GRADE	0.00			0.00			0.00					
PASS CAR/HR	484			0			0	0	1	111	146	0

STEP 1 RIGHT TURNS FROM	C:NB HARRISON	D:SB HARRISON
CONFLICTING FLOWS	598	1
CRITICAL GAPS	4.5	5.0
CAPACITY	745	1199
CAPACITY USED	0%	0%
IMPEDANCE FACTOR	1.00	1.00
ACTUAL CAPACITY	745	1199

1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:04-09-1989 TIME:17:14:07
ESSEX/HARRISON 1995 NO BUILD PM PEAK WITH REVISED NETWORK

STEP 2 LEFT TURNS FROM	B:WB ESSEX	A:EB ESSEX
CONFLICTING FLOWS	1196	1
CRITICAL GAPS	5.0	5.0
CAPACITY	309	1199
CAPACITY USED	0%	40%
IMPEDANCE FACTOR	1.00	0.67
ACTUAL CAPACITY	309	1199

STEP 3 THRU MOVES FROM	C:NB HARRISON	D:SB HARRISON
CONFLICTING FLOWS	1636	1636
CRITICAL GAPS	5.5	6.0
CAPACITY	127	99
CAPACITY USED	0%	148%
IMPEDANCE FACTOR	1.00	0.00
ACTUAL CAPACITY	86	66

STEP 4 LEFT TURNS FROM	C:NB HARRISON	D:SB HARRISON
CONFLICTING FLOWS	1769	1637
CRITICAL GAPS	6.0	6.5
CAPACITY	78	76
ACTUAL CAPACITY	0	51

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM A	484	1199	715	A	5.03	0.68
ALL MOVES FROM C:	1	0	-1	F	INFINITE	INFINITE
LT FROM D:	111	51	-60	F	INFINITE	INFINITE
SHARED TH/RT FROM D:	146	66	-80	F	INFINITE	INFINITE

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE 04-09-1989 TIME:17:15:53
ESSEX/HARRISON 1995 NO BUILD SAT PEAK WITH REVISED NETWORK

LAST DATASETS LOADED OR SAVED
VOLUME=13SAT GEOMETRICS=13SAT

```
KEY:   D
       :
     A- -B
       :
       C
```

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000. YES
CONTROLS: FROM C: YIELD
FROM D. STOP
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 2 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: YES
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH: C: NB HARRISON
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH: D: SB HARRISON
EXCLUSIVE LEFT TURN LANES: YES
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: EB ESSEX	B: WB ESSEX	C: NB HARRISON	D: SB HARRISON
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A: EB ESSEX			B: WB ESSEX			C: NB HARRISON			D: SB HARRISON		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	399	823	385	0	0	1	0	0	1	113	55	0
PHF	0.87			0.91			0.87			0.87		
ADJ VOLUME	459	946	443	0	0	1	0	0	1	130	63	0
PERCENT GRADE	0.00			0.00			0.00					
PASS CAR/HR	504			0			0	0	1	143	70	0

STEP 1 RIGHT TURNS FROM	C:NB HARRISON	D:SB HARRISON
CONFLICTING FLOWS	473	1
CRITICAL GAPS	4.5	5.0
CAPACITY	844	1199
CAPACITY USED	0%	0%
IMPEDANCE FACTOR	1.00	1.00
ACTUAL CAPACITY	844	1199

1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:04-09-1989 TIME:17:15:53
ESSEX/HARRISON 1995 NO BUILD SAT PEAK WITH REVISED NETWORK

STEP 2 LEFT TURNS FROM	B:WB ESSEX	A:EB ESSEX
CONFLICTING FLOWS	946	1
CRITICAL GAPS	5.0	5.0
CAPACITY	424	1199
CAPACITY USED	0%	42%
IMPEDANCE FACTOR	1.00	0.66
ACTUAL CAPACITY	424	1199

STEP 3 THRU MOVES FROM	C:NB HARRISON	D:SB HARRISON
CONFLICTING FLOWS	1406	1405
CRITICAL GAPS	5.5	6.0
CAPACITY	183	146
CAPACITY USED	0%	48%
IMPEDANCE FACTOR	1.00	0.60
ACTUAL CAPACITY	120	95

STEP 4 LEFT TURNS FROM	C:NB HARRISON	D:SB HARRISON
CONFLICTING FLOWS	1469	1406
CRITICAL GAPS	6.0	6.5
CAPACITY	131	116
ACTUAL CAPACITY	51	76

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM A	504	1199	694	A	5.19	0.73
ALL MOVES FROM C:	1	844	843	A	4.27	0.00
LT FROM D:	143	76	-67	F	INFINITE	INFINITE
SHARED TH/RT FROM D.	70	95	26	E	139.14	2.69

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:04-09-1989 TIME:17:26:20
HARRISON/AVE DE LAF/GARAGE 1995 NO BUILD AM PEAK REVISED NETWORK

LAST DATASETS LOADED OR SAVED
VOLUME=14AM GEOMETRICS=14AM

```
KEY:   D
       |
     A- -B
       |
       C
```

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS. FROM C: YIELD
FROM D: STOP
FROM D RT LANE. STOP
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 4 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: NO
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH. C NB HARRISON
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH. D: GARAGE
EXCLUSIVE LEFT TURN LANES: YES
EXCLUSIVE RIGHT TURN LANES: YES
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: AVE DE LAFA	B: AVE DE LAFA	C: NB HARRISON	D: GARAGE
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A. AVE DE LAFA			B: AVE DE LAFA			C: NB HARRISON			D: GARAGE		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	0	0	1	425	0	204	0	0	1	0	8	0
PHF	0.85			0.85			0.87			0.85		
ADJ VOLUME	0	0	1	500	0	240	0	0	1	0	9	0
PERCENT GRADE	0.00			0.00			0.00					
PERCENT CYCLES	0.00			0.00			0.00			0.00		
PASSENGER CARS	0.00			0.00			0.00			%100.00		
PERCENT LT TRU	0.00			0.00			0.00			0.00		
PERCENT HV TRU	0.00			0.00			0.00			0.00		
PASS CAR/HR	0			550			0	0	1	0	9	0

STEP 1 RIGHT TURNS FROM	C:NB HARRISON	D:GARAGE
CONFLICTING FLOWS	1	120
CRITICAL GAPS	4.5	5.0
CAPACITY	1309	1066
CAPACITY USED	0%	0%
IMPEDANCE FACTOR	1.00	1.00
ACTUAL CAPACITY	1309	1066

1965 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:04-09-1989 TIME:17:26:20
HARRISON/AVE DE LAF/GARAGE 1995 NO BUILD AM PEAK REVISED NETWORK

STEP 2 LEFT TURNS FROM	B:AVE DE LAFA	A:AVE DE LAFA
CONFLICTING FLOWS	1	240
CRITICAL GAPS	5.5	5.5
CAPACITY	1106	849
CAPACITY USED	50%	0%
IMPEDANCE FACTOR	0.58	1.00
ACTUAL CAPACITY	1106	849

STEP 3 THRU MOVES FROM	C:NB HARRISON	D:GARAGE
CONFLICTING FLOWS	741	621
CRITICAL GAPS	6.0	6.5
CAPACITY	397	408
CAPACITY USED	0%	2%
IMPEDANCE FACTOR	1.00	0.99
ACTUAL CAPACITY	230	236

STEP 4 LEFT TURNS FROM	C:NB HARRISON	D:GARAGE
CONFLICTING FLOWS	750	622
CRITICAL GAPS	6.5	7.0
CAPACITY	337	357
ACTUAL CAPACITY	193	207

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM E:	550	1106	556	A	6.47	0.99
ALL MOVES FROM C:	1	1309	1307	A	2.75	0.00
TH FROM D:	9	236	227	C	15.86	0.04

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:04-09-1989 TIME:17:31:09
HARRISON/AVE DE LAF/GARAGE 1995 NO BUILD PM PEAK REVISED NETWORK]?

LAST DATASETS LOADED OR SAVED
VOLUME=14PM GEOMETRICS=14PM

```
KEY:   D
       |
     A- -E
       |
       C
```

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS: FROM C: YIELD
FROM D: STOP
FROM D RT LANE: STOP
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 4 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: NO
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH: C: NB HARRISON
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH: D: GARAGE
EXCLUSIVE LEFT TURN LANES: YES
EXCLUSIVE RIGHT TURN LANES: YES
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: AVE DE LAFA	B: AVE DE LAFA	C: NB HARRISON	D: GARAGE
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A: AVE DE LAFA			B: AVE DE LAFA			C: NB HARRISON			D: GARAGE		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	0	0	1	498	0	61	0	0	1	0	110	0
PHF	0.95			0.95			0.87			0.85		
ADJ VOLUME	0	0	1	524	0	64	0	0	1	0	129	0
PERCENT GRADE	0.00			0.00			0.00					
PERCENT CYCLES	0.00			0.00			0.00			0.00		
PASSENGER CARS	0.00			0.00			0.00			%100.00		
PERCENT LT TRU	0.00			0.00			0.00			0.00		
PERCENT HV TRU	0.00			0.00			0.00			0.00		
PASS CAR/HR	0			577			0	0	1	0	129	0

STEP 1 RIGHT TURNS FROM	C:NB HARRISON	D:GARAGE
CONFLICTING FLOWS	1	32
CRITICAL GAPS	4.5	5.0
CAPACITY	1309	1163
CAPACITY USED	0%	0%
IMPEDANCE FACTOR	1.00	1.00

1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:04-09-1989 TIME:17:31:09
HARRISON/AVE DE LAF/GARAGE 1995 NO BUILD PM PEAK REVISED NETWORK]?

STEP 2 LEFT TURNS FROM	B:AVE DE LAFA	A.AVE DE LAFA
CONFLICTING FLOWS	1	54
CRITICAL GAPS	5.5	5.5
CAPACITY	1106	1033
CAPACITY USED	52%	0%
IMPEDANCE FACTOR	0.55	1.00
ACTUAL CAPACITY	1106	1033

STEP 3 THRU MOVES FROM	C:NB HARRISON	D:GARAGE
CONFLICTING FLOWS	589	557
CRITICAL GAPS	6.0	6.5
CAPACITY	489	448
CAPACITY USED	0%	29%
IMPEDANCE FACTOR	1.00	0.78
ACTUAL CAPACITY	271	248

STEP 4 LEFT TURNS FROM	C:NB HARRISON	D:GARAGE
CONFLICTING FLOWS	718	559
CRITICAL GAPS	6.5	7.0
CAPACITY	353	395
ACTUAL CAPACITY	153	219

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM B:	577	1106	530	A	6.79	1.09
ALL MOVES FROM C:	1	1309	1307	A	2.75	0.00
TH FROM D	129	248	119	D	30.24	1.09

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:04-09-1989 TIME:17:32.42
HARRISON/AVE DE LAF/GARAGE 1995 NO BUILD SAT PEAK EXISTING NETWORK

LAST DATASETS LOADED OR SAVED
VOLUME=14SAT GEOMETRICS=14SAT

```
KEY:   D
       |
     A- -B
       |
       C
```

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS FROM C: YIELD
FROM D: STOP
FROM D RT LANE: STOP
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 4 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE NO
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH: C: NB HARRISON
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH: D: GARAGE
EXCLUSIVE LEFT TURN LANES: YES
EXCLUSIVE RIGHT TURN LANES: YES
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: AVE DE LAFA	B: AVE DE LAFA	C: NB HARRISON	D: GARAGE
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A: AVE DE LAFA			B: AVE DE LAFA			C: NB HARRISON			D: GARAGE		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	0	0	1	390	0	86	0	0	1	0	48	0
PHF	0.87			0.87			0.87			0.87		
ADJ VOLUME	0	0	1	448	0	99	0	0	1	0	55	0
PERCENT GRADE	0.00			0.00			0.00					
PERCENT CYCLES	0.00			0.00			0.00			0.00		
PASSENGER CARS	0.00			0.00			0.00			%100.00		
PERCENT LT TRU	0.00			0.00			0.00			0.00		
PERCENT HV TRU	0.00			0.00			0.00			0.00		
PASS CAR/HR	0			493			0	0	1	0	55	0

STEP 1 RIGHT TURNS FROM	C:NB HARRISON	D:GARAGE
CONFLICTING FLOWS	1	49
CRITICAL GAPS	4.5	5.0
CAPACITY	1308	1143
CAPACITY USED	0%	0%
IMPEDANCE FACTOR	1.00	1.00
ACTUAL CAPACITY	1308	1143

1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:04-09-1989 TIME:17:32:42
HARRISON/AVE DE LAF/GARAGE 1995 NO BUILD SAT PEAK EXISTING NETWORK

STEP 2 LEFT TURNS FROM	B:AVE DE LAFA	A:AVE DE LAFA
CONFLICTING FLOWS	1	99
CRITICAL GAPS	5.5	5.5
CAPACITY	1106	995
CAPACITY USED	45%	0%
IMPEDANCE FACTOR	0.63	1.00
ACTUAL CAPACITY	1106	995

STEP 3 THRU MOVES FROM	C:NB HARRISON	D:GARAGE
CONFLICTING FLOWS	548	499
CRITICAL GAPS	6.0	6.5
CAPACITY	517	488
CAPACITY USED	0%	11%
IMPEDANCE FACTOR	1.00	0.93
ACTUAL CAPACITY	326	306

STEP 4 LEFT TURNS FROM	C:NB HARRISON	D:GARAGE
CONFLICTING FLOWS	603	500
CRITICAL GAPS	6.5	7.0
CAPACITY	419	433
ACTUAL CAPACITY	246	273

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM B:	493	1106	613	A	5.67	0.80
ALL MOVES FROM C:	1	1308	1307	A	2.75	0.00
TH FROM D:	55	308	252	C	14.26	0.22

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE 04-09-1989 TIME:17:34:43
BEDFORD/CHAUNCY/GARAGE 1995 NO BUILD AM PEAK REVISED NETWORK]?

LAST DATASETS LOADED OR SAVED
VOLUME=16AM GEOMETRICS=16AM

```
KEY    D
       |
     A- -B
       |
       C
```

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS: FROM C: STOP
FROM D: STOP
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 2 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: YES
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH C: BEDFORD ST
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH D: GARAGE
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: NB CHAUNCY	B: SB CHAUNCY	C: BEDFORD ST	D: GARAGE
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A: NB CHAUNCY			B: SB CHAUNCY			C: BEDFORD ST			D: GARAGE		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	18	309	132	0	1	0	152	128	98	16	16	0
PHF	0.92			0.92			0.92			0.92		
ADJ VOLUME	20	336	143	0	1	0	165	139	107	17	20	0
PERCENT GRADE	0.00			0.00			0.00					
PERCENT CYCLES	0.00			0.00			0.00			0.00		
PASSENGER CARS	0.00			0.00			0.00			%100.00		
PERCENT LT TRU	0.00			0.00			0.00			0.00		
PERCENT HV TRU	0.00			0.00			0.00			0.00		
PASS CAR/HR	22			0			182	153	117	17	20	0

STEP 1 RIGHT TURNS FROM	C:BEDFORD ST	D:GARAGE
CONFLICTING FLOWS	336	1
CRITICAL GAPS	5.0	5.0
CAPACITY	853	1199
CAPACITY USED	14%	0%
IMPEDANCE FACTOR	0.91	1.00
ACTUAL CAPACITY	853	1199

1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:04-09-1989 TIME:17:34:43
BEDFORD/CHAUNCY/GARAGE 1995 NO BUILD AM PEAK REVISED NETWORK]?

STEP 2 LEFT TURNS FROM	B:SB CHAUNCY	A:NB CHAUNCY
CONFLICTING FLOWS	336	1
CRITICAL GAPS	5.0	5.0
CAPACITY	853	1199
CAPACITY USED	0%	2%
IMPEDANCE FACTOR	1.00	0.99
ACTUAL CAPACITY	853	1199

STEP 3 THRU MOVES FROM	C:BEDFORD ST	D:GARAGE
CONFLICTING FLOWS	357	357
CRITICAL GAPS	6.0	6.0
CAPACITY	663	663
CAPACITY USED	23%	3%
IMPEDANCE FACTOR	0.83	0.99
ACTUAL CAPACITY	658	658

STEP 4 LEFT TURNS FROM	C:BEDFORD ST	D:GARAGE
CONFLICTING FLOWS	376	602
CRITICAL GAPS	6.5	6.5
CAPACITY	580	420
ACTUAL CAPACITY	566	316

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM A	22	1199	1177	A	3.06	0.02
ALL MOVES FROM C:	452	655	203	C	17.74	2.23
ALL MOVES FROM D:	37	436	399	B	9.02	0.09

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE 04-09-1989 TIME:17:37:38
BEDFORD/CHAUNCY/GARAGE 1995 NO BUILD PM PEAK REVISED NETWORK

LAST DATASETS LOADED OR SAVED
VOLUME=16PM GEOMETRICS=16PM
KEY D
:
A- -B
:
C

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000. YES
CONTROLS. FROM C: STOP
FROM D: STOP
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 2 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: YES
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH C BEDFORD ST
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE. NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH D: GARAGE
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A NB CHAUNCY	B: SB CHAUNCY	C: BEDFORD ST	D: GARAGE
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A NB CHAUNCY			B SB CHAUNCY			C: BEDFORD ST			D: GARAGE		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	15	324	71	0	1	0	175	82	53	52	112	44
PHF	0.92			0.92			0.92			0.92		
ADJ VOLUME	16	352	77	0	1	0	190	89	58	57	122	48
PERCENT GRADE	0.00			0.00			0.00					
PERCENT CYCLES	0.00			0.00			0.00			0.00		
PASSENGER CARS	0.00			0.00			0.00			%100.00		
PERCENT LT TRU	0.00			0.00			0.00			0.00		
PERCENT HV TRU	0.00			0.00			0.00			0.00		
PASS CAR/HR	18			0			209	98	63	57	122	48

STEP 1 RIGHT TURNS FROM	C:BEDFORD ST	D:GARAGE
CONFLICTING FLOWS	352	1
CRITICAL GAPS	5.0	5.0
CAPACITY	839	1199
CAPACITY USED	8%	4%
IMPEDANCE FACTOR	0.96	0.98
ACTUAL CAPACITY	839	1199

1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:04-09-1989 TIME:17:37:38
BEDFORD/CHAUNCY/GARAGE 1995 NO BUILD PM PEAK REVISED NETWORK

STEP 2 LEFT TURNS FROM	B:SB CHAUNCY	A:NB CHAUNCY
CONFLICTING FLOWS	352	1
CRITICAL GAPS	5.0	5.0
CAPACITY	839	1199
CAPACITY USED	0%	1%
IMPEDANCE FACTOR	1.00	0.99
ACTUAL CAPACITY	839	1199

STEP 3 THRU MOVES FROM	C:BEDFORD ST	D:GARAGE
CONFLICTING FLOWS	370	370
CRITICAL GAPS	6.0	6.0
CAPACITY	652	652
CAPACITY USED	15%	19%
IMPEDANCE FACTOR	0.90	0.87
ACTUAL CAPACITY	648	648

STEP 4 LEFT TURNS FROM	C:BEDFORD ST	D:GARAGE
CONFLICTING FLOWS	539	516
CRITICAL GAPS	6.5	6.5
CAPACITY	450	476
ACTUAL CAPACITY	390	407

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM A.	18	1199	1181	A	3.05	0.02
ALL MOVES FROM C.	371	486	115	D	31.27	3.22
ALL MOVES FROM D.	226	617	391	B	9.21	0.58

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:04-09-1989 TIME:17:40:30
BEDFORD/CHAUNCY/GARAGE 1995 NO BUILD SAT PEAK REVISED NETWORK]?

LAST DATASETS LOADED OR SAVED
VOLUME=16SAT GEOMETRICS=16SAT

```
KEY:   D
       |
     A- -E
       |
       C
```

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS: FROM C: STOP
FROM D: STOP
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 2 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: YES
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH: C: BEDFORD ST
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH: D: GARAGE
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: NB CHAUNCY	B: SB CHAUNCY	C: BEDFORD ST	D: GARAGE
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A: NB CHAUNCY			B: SB CHAUNCY			C: BEDFORD ST			D: GARAGE		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	10	251	101	0	1	0	182	31	120	12	31	3
PHF	0.90			0.90			0.90			0.90		
ADJ VOLUME	11	279	112	0	1	0	202	34	133	13	34	3
PERCENT GRADE	0.00			0.00			0.00					
PERCENT CYCLES	0.00			0.00			0.00			0.00		
PASSENGER CARS	0.00			0.00			0.00			%100.00		
PERCENT LT TRU	0.00			0.00			0.00			0.00		
PERCENT HV TRU	0.00			0.00			0.00			0.00		
PASS CAP/HR	12			0			222	38	147	13	34	3

STEP 1 RIGHT TURNS FROM	C:BEDFORD ST	D:GARAGE
CONFLICTING FLOWS	279	1
CRITICAL GAPS	5.0	5.0
CAPACITY	906	1199
CAPACITY USED	16%	0%
IMPEDANCE FACTOR	0.89	1.00
ACTUAL CAPACITY	906	1199

1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:04-09-1989 TIME:17:40:30
BEDFORD/CHAUNCY/GARAGE 1995 NO BUILD SAT PEAK REVISED NETWORK]?

STEP 2 LEFT TURNS FROM	B:SB CHAUNCY	A:NB CHAUNCY
CONFLICTING FLOWS	279	1
CRITICAL GAPS	5.0	5.0
CAPACITY	906	1199
CAPACITY USED	0%	1%
IMPEDANCE FACTOR	1.00	1.00
ACTUAL CAPACITY	906	1199

STEP 3 THRU MOVES FROM	C:BEDFORD ST	D:GARAGE
CONFLICTING FLOWS	291	291
CRITICAL GAPS	6.0	6.0
CAPACITY	721	721
CAPACITY USED	5%	5%
IMPEDANCE FACTOR	0.97	0.97
ACTUAL CAPACITY	718	718

STEP 4 LEFT TURNS FROM	C:BEDFORD ST	D:GARAGE
CONFLICTING FLOWS	329	459
CRITICAL GAPS	6.5	6.5
CAPACITY	619	516
ACTUAL CAPACITY	601	445

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM A:	12	1199	1186	A	3.03	0.01
ALL MOVES FROM C:	407	696	289	C	12.46	1.41
ALL MOVES FROM D:	51	633	582	A	6.18	0.09

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:04-09-1989 TIME.17:44:32
KINGSTON/BEDFORD 1995 NO BUILD AM PEAK EXISTING NETWORK

LAST DATASETS LOADED OR SAVED
VOLUME=19AM GEOMETRICS=19AM

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KEY    D
       :
     A- -B
       :
       C
```

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS: FROM C: YIELD
FROM D: STOP
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 2 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: NO
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH. C. NB KINGSTON
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH. D: SB KINGSTON
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES. NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: EB BEDFORD	B: WB BEDFORD	C: NB KINGSTON	D: SB KINGSTON
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A. EB BEDFORD			B: WB BEDFORD			C: NB KINGSTON			D: SB KINGSTON		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	0	0	150	123	271	0	0	1	0	0	219	107
PHF	0.88			0.88			0.88			0.88		
ADJ VOLUME	0	0	170	140	308	0	0	1	0	0	249	122
PERCENT GRADE	0.00			0.00			0.00					
PASS CAR/HR	0			154			0	1	0	0	274	134

STEP 1 RIGHT TURNS FROM	C:NB KINGSTON	D:SB KINGSTON
CONFLICTING FLOWS	85	308
CRITICAL GAPS	4.5	5.0
CAPACITY	1215	879
CAPACITY USED	0%	15%
IMPEDANCE FACTOR	1.00	0.90
ACTUAL CAPACITY	1215	879

DATE:04-09-1989 TIME:17:44:32

KINGSTON/BEDFORD 1995 NO BUILD AM PEAK EXISTING NETWORK

STEP 2 LEFT TURNS FROM	B:WB BEDFORD	A:EB BEDFORD
CONFLICTING FLOWS	170	308
CRITICAL GAPS	5.0	5.0
CAPACITY	1013	879
CAPACITY USED	15%	0%
IMPEDANCE FACTOR	0.90	1.00
ACTUAL CAPACITY	1013	879

STEP 3 THRU MOVES FROM	C:NB KINGSTON	D:SB KINGSTON
CONFLICTING FLOWS	533	618
CRITICAL GAPS	5.5	6.0
CAPACITY	601	470
CAPACITY USED	0%	58%
IMPEDANCE FACTOR	1.00	0.49
ACTUAL CAPACITY	540	422

STEP 4 LEFT TURNS FROM	C:NB KINGSTON	D:SB KINGSTON
CONFLICTING FLOWS	903	619
CRITICAL GAPS	6.0	6.5
CAPACITY	315	409
ACTUAL CAPACITY	125	368

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM B	154	1013	859	A	4.19	0.18
ALL MOVES FROM C:	1	540	539	A	6.68	0.00
ALL MOVES FROM D:	408	509	102	D	35.41	4.01

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:04-09-1989 TIME:17:46:25
KINGSTON/BEDFORD-1995 NO BUILD PM PEAK REVISED NETWORK

LAST DATASETS LOADED OR SAVED
VOLUME=19PM GEOMETRICS=19PM

```
KEY    D
       .
     A- -B
       :
       C
```

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS: FROM C: YIELD
FROM D: STOP
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 2 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: NO
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE. NO

MINOR STREET LANES

APPROACH: C: NB KINGSTON
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH: D: SB KINGSTON
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: EB BEDFORD	B: WB BEDFORD	C: NB KINGSTON	D: SB KINGSTON
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A EB BEDFORD			B: WB BEDFORD			C: NB KINGSTON			D: SB KINGSTON		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	0	0	184	130	155	0	0	1	0	0	382	165
PHF	0.94			0.94			0.94			0.94		
ADJ VOLUME	0	0	196	138	165	0	0	1	0	0	406	176
PERCENT GRADE	0.00			0.00			0.00					
PASS CAR/HR	0			152			0	1	0	0	447	193

STEP 1 RIGHT TURNS FROM	C:NB KINGSTON	D:SB KINGSTON
CONFLICTING FLOWS	98	165
CRITICAL GAPS	4.5	5.0
CAPACITY	1201	1019
CAPACITY USED	0%	19%
IMPEDANCE FACTOR	1.00	0.87
ACTUAL CAPACITY	1201	1019

DATE:04-09-1989 TIME:17:46:25
KINGSTON/BEDFORD-1995 NO BUILD PM PEAK REVISED NETWORK

STEP 2 LEFT TURNS FROM	B:WB BEDFORD	A:EB BEDFORD
CONFLICTING FLOWS	196	165
CRITICAL GAPS	5.0	5.0
CAPACITY	987	1019
CAPACITY USED	15%	0%
IMPEDANCE FACTOR	0.90	1.00
ACTUAL CAPACITY	987	1019

STEP 3 THRU MOVES FROM	C:NB KINGSTON	D:SB KINGSTON
CONFLICTING FLOWS	401	499
CRITICAL GAPS	5.5	6.0
CAPACITY	704	551
CAPACITY USED	0%	81%
IMPEDANCE FACTOR	1.00	0.24
ACTUAL CAPACITY	632	495

STEP 4 LEFT TURNS FROM	C:NB KINGSTON	D:SB KINGSTON
CONFLICTING FLOWS	983	500
CRITICAL GAPS	6.0	6.5
CAPACITY	280	487
ACTUAL CAPACITY	52	437

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM B:	152	987	835	A	4.31	0.18
ALL MOVES FROM C:	1	632	630	A	5.71	0.00
ALL MOVES FROM D:	640	585	-55	F	INFINITE	INFINITE

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE.04-09-1999 TIME:17:48:36
[KINGSTON/BEDFORD-1995 NO BUILD SAT PEAK REVISED NETWORK

LAST DATASETS LOADED OR SAVED
VOLUME=19SAT GEOMETRICS=19SAT

```
KEY.   D
       !
     A- -B
       !
       C
```

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS: FROM C: YIELD
FROM D: STOP
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 2 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: NO
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH. C: NB KINGSTON
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE. NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH D. SB KINGSTON
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: EB BEDFORD	B: WB BEDFORD	C: NB KINGSTON	D: SB KINGSTON
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A EB BEDFORD			B: WB BEDFORD			C: NB KINGSTON			D: SB KINGSTON		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	0	0	132	92	135	0	0	1	0	0	248	195
PHF	0.92			0.92			0.92			0.92		
ADJ VOLUME	0	0	143	100	147	0	0	1	0	0	270	212
PERCENT GRADE	0.00			0.00			0.00					
PASS CAR/HR	0			110			0	1	0	0	297	233

STEP 1 RIGHT TURNS FROM	C:NB KINGSTON	D:SB KINGSTON
CONFLICTING FLOWS	72	147
CRITICAL GAPS	4.5	5.0
CAPACITY	1229	1038
CAPACITY USED	0%	22%
IMPEDANCE FACTOR	1.00	0.84
ACTUAL CAPACITY	1229	1038

1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:04-09-1989 TIME:17:48:36
[KINGSTON/BEDFORD-1995 NO BUILD SAT PEAK REVISED NETWORK

STEP 2 LEFT TURNS FROM	B:WB BEDFORD	A:EB BEDFORD
CONFLICTING FLOWS	143	147
CRITICAL GAPS	5.0	5.0
CAPACITY	1041	1038
CAPACITY USED	11%	0%
IMPEDANCE FACTOR	0.93	1.00
ACTUAL CAPACITY	1041	1038

STEP 3 THRU MOVES FROM	C:NB KINGSTON	D:SB KINGSTON
CONFLICTING FLOWS	318	390
CRITICAL GAPS	5.5	6.0
CAPACITY	776	635
CAPACITY USED	0%	47%
IMPEDANCE FACTOR	1.00	0.61
ACTUAL CAPACITY	725	594

STEP 4 LEFT TURNS FROM	C:NB KINGSTON	D:SB KINGSTON
CONFLICTING FLOWS	800	391
CRITICAL GAPS	6.0	6.5
CAPACITY	365	568
ACTUAL CAPACITY	174	531

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM B.	110	1041	931	A	3.87	0.12
ALL MOVES FROM C:	1	725	724	A	4.97	0.00
ALL MOVES FROM D:	530	732	202	C	17.83	2.62

1995 Build LOS Analysis

Revised Roadway Network

TREMONT ST/TEMPLE PL

[1995 BUILD AM PEAK WITH REVISED NETWORK]

Date: 04-10-1989 Time: 10:16:01

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=1AM GEOMETRICS=1AM SIGNAL=1AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
WB	TEMPLE PL	20	0	0	20	1	0	0	9.0	0.0	0.0	24
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	TREMONT ST	0	1199	0	1199	0	3	0	0.0	10.0	0.0	40

TOTAL VOLUME = 1219

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	0.0%	N	0	0	.000	0		9.0	0
WB	1.0%	2.0%	Y	10	0	.750	200	Y	9.0	3
NB	0.0%	0.0%	N	0	0	.000	0		13.0	0
SB	-1.0%	2.0%	N	0	20	.960	300	Y	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1					*											*	3.3	4	A
2				*				*				*				*	0.0	24	A
3								*							*		44.7	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	20	0	0	.750	27	0	0
NB	0	0	0	.000	0	0	0
SB	0	1199	0	.960	0	1249	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
WB	LT	27	1	1.00	27	1.00	0.00
SB	TH	1249	3	1.10	1374	0.00	0.00

TREMONT ST/TEMPLE PL
[1995 BUILD AM PEAK WITH REVISED NETWORK]
date 04-10-1989 time: 10:16:02

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	LT	1800	1	0.900	0.990	0.995	0.849	1.000	0.900	1.000	0.950	1158
SB	TH	1800	3	0.933	0.990	1.005	1.000	0.972	0.900	1.000	1.000	4388

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	LT	27	1158	0.02	0.04	48	0.56	*
SB	TH	1374	4388	0.31	0.56	2453	0.56	*

CYCLE= 80.0 LOST=32.0 SUM V/S CRIT= 0.34 TOTAL V/C= 0.56

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CN	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	LT	0.56	*	0.04	80.0	28.61	48	7.58	1.00	36.19	D	0.6	3
SB	TH	0.56	*	0.56	80.0	8.61	2453	0.15	0.85	7.45	B	12.2	38

DIR	STREET	DELAY	LOS
WB	TEMPLE PL	36.19	D
SB	TREMONT ST	7.45	B

INTERSECTION DELAY = 8.00 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

TREMONT ST/TEMPLE PL

1995 BUILD PM PEAK WITH REVISED NETWORK

Date: 04-10-1999 Time: 10:17:59

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=1PM GEOMETRICS=1PM SIGNAL=

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
WB	TEMPLE PL	20	0	0	20	1	0	0	9.0	0.0	0.0	24
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	TREMONT ST	0	1587	0	1587	0	3	0	0.0	10.0	0.0	40

TOTAL VOLUME = 1607

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	0.0%	N	0	0	.000	0		9.0	0
WB	1.0%	2.0%	Y	10	0	.910	200	Y	9.0	3
NB	0.0%	0.0%	N	0	0	.000	0		13.0	0
SB	-1.0%	2.0%	N	0	20	.910	300	Y	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1					*											*	2.0	4	A
2				*				*				*				*	0.0	24	A
3								*						*			46.0	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	20	0	0	.910	22	0	0
NB	0	0	0	.000	0	0	0
SB	0	1587	0	.910	0	1744	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
WB	LT	22	1	1.00	22	1.00	0.00
SB	TH	1744	3	1.10	1918	0.00	0.00

TREMONT ST/TEMPLE PL
1995 BUILD PM PEAK WITH REVISED NETWORK
date: 04-10-1989 time: 10:18.00

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	LT	1800	1	0.900	0.990	0.995	0.849	1.000	0.900	1.000	0.950	1158
SB	TH	1800	3	0.933	0.990	1.005	1.000	0.972	0.900	1.000	1.000	4388

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	LT	22	1158	0.02	0.02	29	0.76	*
SB	TH	1918	4388	0.44	0.58	2523	0.76	*

CYCLE= 80.0 LOST=32.0 SUM V/S CRIT= 0.46 TOTAL V/C= 0.76

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	LT	0.76	*	0.02	80.0	29.46	29	60.21	1.00	89.67	F	0.9	4
SB	TH	0.76	*	0.58	80.0	9.75	2523	1.17	0.85	9.29	B	16.5	50

DIR	STREET	DELAY	LOS
WB	TEMPLE PL	89.67	F
SB	TREMONT ST	9.29	B

INTERSECTION DELAY = 10.20 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

TREMONT ST/WEST ST

1995 BUILD AM PEAK WITH REVISED NETWORK

Date. 04-10-1989 Time: 10:19:37

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=2AM GEOMETRICS=2AM SIGNAL=

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
WB	WEST ST	30	0	0	30	1	0	0	12.0	0.0	0.0	24
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	TREMONT ST	0	1219	0	1219	0	3	0	0.0	10.0	0.0	40

TOTAL VOLUME = 1249

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK			PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	0.0%	N	0	0	.000	0		9.0	0
WB	1.0%	2.0%	Y	10	0	.960	200	Y	9.0	3
NB	0.0%	0.0%	N	0	0	.000	0		13.0	0
SB	-1.0%	2.0%	N	0	20	.960	300	Y	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1					*											*	3.4	4	A
2				*				*				*				*	0.0	24	A
3								*							*		44.6	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	30	0	0	.960	31	0	0
NB	0	0	0	.000	0	0	0
SB	0	1219	0	.960	0	1270	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
WB	LT	31	1	1.00	31	1.00	0.00
SB	TH	1270	3	1.10	1397	0.00	0.00

TREMONT ST/WEST ST

1995 BUILD AM PEAK WITH REVISED NETWORK

date: 04-10-1989 time: 10.19.38

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	LT	1800	1	1.000	0.990	0.995	0.849	1.000	0.900	1.000	0.950	1287
SB	TH	1800	3	0.933	0.990	1.005	1.000	0.972	0.900	1.000	1.000	4388

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WE	LT	31	1287	0.02	0.04	55	0.57	*
SB	TH	1397	4388	0.32	0.56	2446	0.57	*

CYCLE= 80.0 LOST=32.0 SUM V/S CRIT= 0.34 TOTAL V/C= 0.57

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	LT	0.57	*	0.04	80.0	28.56	55	7.94	1.00	36.50	D	0.7	3
SB	TH	0.57	*	0.56	80.0	8.73	2446	0.19	0.85	7.58	B	12.5	38

DIR	STREET	DELAY	LOS
WB	WEST ST	36.50	D
SB	TREMONT ST	7.58	B

INTERSECTION DELAY = 8.21 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

TREMONT ST/WEST ST

1995 BUILD PM PEAK WITH REVISED NETWORK

Date: 04-10-1989 Time: 10:23:07

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=2PM GEOMETRICS=2PM SIGNAL=

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
WB	WEST ST	30	0	0	30	1	0	0	12.0	0.0	0.0	24
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	TREMONT ST	0	1607	0	1607	0	3	0	0.0	10.0	0.0	40

TOTAL VOLUME = 1637

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	0.0%	N	0	0	.000	0		9.0	0
WB	1.0%	2.0%	Y	10	0	.920	200	Y	9.0	3
NB	0.0%	0.0%	N	0	0	.000	0		13.0	0
SB	-1.0%	2.0%	N	0	20	.920	300	Y	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1					*											*	2.6	4	A
2				*				*				*				*	0.0	24	A
3								*						*			45.4	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	30	0	0	.920	33	0	0
NB	0	0	0	.000	0	0	0
SB	0	1607	0	.920	0	1747	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
WB	LT	33	1	1.00	33	1.00	0.00
SB	TH	1747	3	1.10	1921	0.00	0.00

TREMONT ST/WEST ST

1995 BUILD PM PEAK WITH REVISED NETWORK

date: 04-10-1989 time: 10:23:08

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	LT	1800	1	1.000	0.990	0.995	0.849	1.000	0.900	1.000	0.950	1287
SB	TH	1800	3	0.933	0.990	1.005	1.000	0.972	0.900	1.000	1.000	4388

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	LT	33	1287	0.03	0.03	42	0.77	*
SB	TH	1921	4388	0.44	0.57	2489	0.77	*

CYCLE= 80.0 LOST=32.0 SUM V/S CRIT= 0.46 TOTAL V/C= 0.77

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	LT	0.77	*	0.03	80.0	29.18	42	48.44	1.00	77.61	F	1.3	5
SB	TH	0.77	*	0.57	80.0	10.13	2489	1.31	0.85	9.72	B	16.8	51

DIR	STREET	DELAY	LOS
WB	WEST ST	77.61	F
SB	TREMONT ST	9.72	B

INTERSECTION DELAY = 10.85 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

TREMONT ST/AVERY ST

1995 BUILD AM PEAK WITH REVISED NETWORK

Date: 04-10-1989 Time: 10:35:37

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=3AM GEOMETRICS=3AM SIGNAL=3AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
WE	AVERY ST	689	0	0	689	2	0	0	12.0	0.0	0.0	24
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	TREMONT ST	0	1248	0	1248	0	3	0	0.0	10.0	0.0	40

TOTAL VOLUME = 1937

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	0.0%	N	0	0	.000	0		9.0	0
WE	1.0%	2.0%	Y	10	0	.960	400	Y	9.0	3
NB	0.0%	0.0%	N	0	0	.000	0		13.0	0
SB	-1.0%	2.0%	N	0	20	.960	700	Y	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1								*						*			38.9	4	A
2					*											*	33.1	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WE	689	0	0	.960	718	0	0
NB	0	0	0	.000	0	0	0
SB	0	1248	0	.960	0	1300	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
WB	LT	718	2	1.05	754	1.00	0.00
SB	TH	1300	3	1.10	1430	0.00	0.00

TREMONT ST/AVERY ST
1995 BUILD AM PEAK WITH REVISED NETWORK
date: 04-10-1989 time: 10:35.38

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	LT	1800	2	1.000	0.990	0.995	0.925	1.000	0.900	1.000	0.920	2715
SB	TH	1800	3	0.933	0.990	1.005	1.000	0.972	0.900	1.000	1.000	4388

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	LT	754	2715	0.28	0.41	1124	0.67	*
SB	TH	1430	4388	0.33	0.49	2133	0.67	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.60 TOTAL V/C= 0.67

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	LT	0.67	*	0.41	80.0	14.45	1124	1.26	1.00	15.71	C	9.3	29
SB	TH	0.67	*	0.49	80.0	11.91	2133	0.67	0.85	10.69	B	14.8	45

DIR	STREET	DELAY	LOS
WB	AVERY ST	15.71	C
SB	TREMONT ST	10.69	B

INTERSECTION DELAY = 12.43 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

TREMONT ST/AVERY ST

1995 BUILD PM PEAK WITH REVISED NETWORK

Date. 04-10-1989 Time: 10:37:27

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=3PM GEOMETRICS=3PM SIGNAL=3PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
WB	AVERY ST	1048	0	0	1048	2	0	0	12.0	0.0	0.0	24
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	TREMONT ST	0	1637	0	1637	0	3	0	0.0	10.0	0.0	40

TOTAL VOLUME = 2685

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	0.0%	N	0	0	.000	0		9.0	0
WB	1.0%	2.0%	Y	10	0	.940	400	Y	9.0	3
NB	0.0%	0.0%	N	0	0	.000	0		13.0	0
SB	-1.0%	2.0%	N	0	20	.940	700	Y	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1								*						*			36.2	4	A
2					*											*	35.8	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	1048	0	0	.940	1115	0	0
NB	0	0	0	.000	0	0	0
SB	0	1637	0	.940	0	1741	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
WB	LT	1115	2	1.05	1171	1.00	0.00
SB	TH	1741	3	1.10	1916	0.00	0.00

TREMONT ST/AVERY ST
1995 BUILD PM PEAK WITH REVISED NETWORK
date: 04-10-1989 time: 10:37.28

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	LT	1800	2	1.000	0.990	0.995	0.925	1.000	0.900	1.000	0.920	2715
SB	TH	1800	3	0.933	0.990	1.005	1.000	0.972	0.900	1.000	1.000	4388

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	LT	1171	2715	0.43	0.45	1214	0.96	*
SB	TH	1916	4388	0.44	0.45	1987	0.96	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.87 TOTAL V/C= 0.96

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CN	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	LT	0.96	*	0.45	80.0	16.33	1214	13.91	1.00	30.25	D	19.0	58
SB	TH	0.96	*	0.45	80.0	16.16	1987	9.99	0.85	22.23	C	24.6	75

DIR	STREET	DELAY	LOS
WB	AVERY ST	30.25	D
SB	TREMONT ST	22.23	C

INTERSECTION DELAY = 25.27 INTERSECTION LOS=D

THE EXISTING TIMING IS OPTIMAL

BOYLSTON ST/TREMONT ST

1995 BUILD AM PEAK WITH REVISED NETWORK

Date: 04-10-1989 Time: 10:41:54

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=4AM GEOMETRICS=4AM SIGNAL=

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	BOYLSTON ST	0	919	157	1076	0	2	0	0.0	12.0	0.0	46
WB	BOYLSTON ST	0	0	0	0	0	0	0	0.0	0.0	0.0	24
NB	TREMONT ST	0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	TREMONT ST	751	901	321	1973	0	4	0	0.0	10.0	0.0	40

TOTAL VOLUME = 3049

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.930	600	Y	18.5	3
WB	0.0%	0.0%	N	10	0	.000	400	Y	18.5	3
NB	0.0%	0.0%	N	0	0	.000	500	Y	13.0	0
SB	-1.0%	2.0%	N	0	20	.930	700	Y	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1		*	*													*	24.1	4	A
2				*				*				*				*	0.0	20	A
3													*	*	*		27.9	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	919	157	.930	0	988	169
WB	0	0	0	.000	0	0	0
NB	0	0	0	.000	0	0	0
SB	751	901	321	.930	808	969	345

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
EB	TH-RT	1157	2	1.05	1215	0.00	0.15
SB	LT-TH-RT	2122	4	1.10	2334	0.38	0.16

BOYLSTON ST/TREMONT ST

1995 BUILD AM PEAK WITH REVISED NETWORK

date: 04-10-1989 time: 10:41:55

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH-RT	1800	2	1.000	0.990	1.000	1.000	0.979	0.900	0.978	1.000	3072
SB	LT-TH-RT	1600	4	0.933	0.990	1.005	1.000	0.979	0.900	0.976	1.000	5110

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH-RT	1215	3072	0.40	0.30	927	1.31	*
SB	LT-TH-RT	2334	5110	0.46	0.35	1780	1.31	*

CYCLE= 80.0 LOST=28.0 SUM V/S CRIT= 0.85 TOTAL V/C= 1.31

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH-RT	1.31	*	0.30	80.0	24.52	927	114.87	0.85	118.48	F	58.5	176
SB	LT-TH-RT	1.31	*	0.35	80.0	23.76	1780	111.48	0.85	114.96	F	103.4	311

DIR	STREET	DELAY	LOS
EB	BOYLSTON ST	118.48	F
SB	TREMONT ST	114.96	F

INTERSECTION DELAY =116.16 INTERSECTION LOS=F

THE EXISTING TIMING IS OPTIMAL

BOYLSTON ST/TREMONT ST

1995 BUILD PM PEAK WITH REVISED NETWORK

Date: 04-10-1989 Time: 10:44:57

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=4PM GEOMETRICS=4PM SIGNAL=

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	BOYLSTON ST	0	888	331	1219	0	1	0	0.0	12.0	0.0	46
WB	BOYLSTON ST	0	0	0	0	0	0	0	0.0	0.0	0.0	24
NB	TREMONT ST	0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	TREMONT ST	473	1373	825	2671	0	4	0	0.0	10.0	0.0	40

TOTAL VOLUME = 3890

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.920	600	Y	18.5	3
WB	0.0%	0.0%	N	10	0	.000	400	Y	18.5	3
NB	0.0%	0.0%	N	0	0	.000	500	Y	13.0	0
SB	-1.0%	2.0%	N	0	20	.920	700	Y	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1		*	*													*	30.7	4	A
2				*				*				*				*	0.0	20	A
3													*	*	*		21.3	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	888	331	.920	0	965	360
WB	0	0	0	.000	0	0	0
NB	0	0	0	.000	0	0	0
SB	473	1373	825	.920	514	1492	897

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
EB	TH-RT	1325	1	1.00	1325	0.00	0.27
SB	LT-TH-RT	2903	4	1.10	3194	0.18	0.31

BOYLSTON ST/TREMONT ST
1995 BUILD PM PEAK WITH REVISED NETWORK
date: 04-10-1989 time. 10:44:58

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH-RT	2100	1	1.000	0.990	1.000	1.000	0.958	0.900	0.799	1.000	1432
SB	LT-TH-RT	1600	4	0.933	0.990	1.005	1.000	0.979	0.900	0.954	1.000	4995

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH-RT	1325	1432	0.93	0.38	551	2.41	*
SB	LT-TH-RT	3194	4995	0.64	0.27	1327	2.41	*

CYCLE= 80.0 LOST=28.0 SUM V/S CRIT= 1.56 TOTAL V/C= 2.41

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH-RT	2.41	*	0.38	80.0	153.79	551	493.47	0.85	550.17	F	272.3	817
SB	LT-TH-RT	2.41	*	0.27	80.0	45.45	1327	489.56	0.85	454.76	F	500.5	1500

DIR	STREET	DELAY	LOS
EB	BOYLSTON ST	550.17	F
SB	TREMONT ST	454.76	F

INTERSECTION DELAY =482.74 INTERSECTION LOS=F

THE EXISTING TIMING IS OPTIMAL

STUART ST/KNEELAND ST/WASHINGTON ST
1995 BUILD AM PEAK REVISED NETWORK
Date: 04-10-1989 Time: 10:49:33

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=5AM GEOMETRICS=5AM SIGNAL=

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

DIR	STREET	VOLUMES LT	TH	RT	TOTAL	# OF LANES LT	TH	RT	LANE WIDTH LT	TH	RT	CROSS WALK
EB	STUART ST	153	741	38	932	1	2	0	11.0	11.0	0.0	48
WB	KNEELAND ST	77	623	165	865	0	2	1	0.0	11.0	11.0	48
NB	WASHINGTON ST	222	417	118	757	0	2	0	0.0	12.0	0.0	36
SB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	40

TOTAL VOLUME = 2554

TRAFFIC & ROADWAY CONDITIONS

DIR	GRADE	%HV	ADJ PARK Y/N	MOVES	BUSES	PHF	PEDESTRIANS CROSS	BUT	MIN	TIME	ARR TYPE
EB	0.0%	2.0%	Y	15	10	.920	200	Y		15.0	3
WB	0.0%	2.0%	Y	15	10	.920	200	Y		15.0	3
NB	0.0%	2.0%	Y	15	15	.920	200	Y		13.0	3
SB	0.0%	0.0%	N	0	0	.000	200	Y		13.0	3

PHASINGS

	EASTBOUND l	t	r	p	WESTBOUND l	t	r	p	NORTHBOUND l	t	r	p	SOUTHBOUND l	t	r	p	GREEN	Y+R	PRE/ACT
1					*	*	*										0.0	0	A
2	*	*	*		*	*	*					*				*	36.1	4	A
3				*				*	*	*	*						35.9	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	153	741	38	.920	166	805	41
WB	77	623	165	.920	84	677	179
NB	222	417	118	.920	241	453	128
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
EB	LT	166	1	1.00	166	1.00	0.00
EB	TH-RT	847	2	1.05	889	0.00	0.05
WB	LT-TH	761	2	1.05	799	0.11	0.00
WB	RT	179	1	1.00	179	0.00	1.00
NB	LT-TH-RT	823	2	1.05	864	0.29	0.16

STUART ST/KNEELAND ST/WASHINGTON ST
1995 BUILD AM PEAK REVISED NETWORK
date: 04-10-1989 time: 10:49.34

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.311	483
EB	TH-RT	1800	2	0.967	0.990	1.000	0.912	0.979	0.900	0.988	1.000	2735
WB	LT-TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.893	2769
WB	RT	1800	1	0.967	0.990	1.000	0.824	0.958	0.900	0.755	1.000	924
NB	LT-TH-RT	1800	2	1.000	0.990	1.000	0.912	0.969	0.900	0.962	0.928	2529

SUPPLEMENTAL WORKSHEET FOR
LEFT-TURN ADJUSTMENT FACTOR FLT
INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	No	Vo	Plto	LGo
EB	80	36	1	166	847	166	1.00	2	761	0.11	0

CALCULATIONS

DIR	Soo	Yo	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
EB	2885	0.264	20.432	0.399	1.000	15.711	0.000	0.000	2.816	0.311	0.311

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	166	483	0.34	0.45	218	0.76	*
EB	TH-RT	889	2735	0.33	0.45	1236	0.72	
WB	LT-TH	799	2769	0.29	0.45	1251	0.64	
WB	RT	179	924	0.19	0.45	417	0.43	
NB	LT-TH-RT	864	2529	0.34	0.45	1134	0.76	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.69 TOTAL V/C= 0.76

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	0.76	*	0.45	80.0	13.94	218	12.20	0.85	22.22	C	2.3	8
EB	TH-RT	0.72		0.45	80.0	13.54	1236	1.72	0.85	12.97	B	10.3	32
WB	LT-TH	0.64		0.45	80.0	12.84	1251	0.84	0.85	11.63	B	9.3	29
WB	RT	0.43		0.45	80.0	11.34	417	0.00	0.85	9.64	B	2.2	7
NB	LT-TH-RT	0.76	*	0.45	80.0	14.06	1134	2.61	0.85	14.17	B	10.1	31

DIR	STREET	DELAY	LOS
EB	STUART ST	14.43	B
WB	KNEELAND ST	11.27	B
NB	WASHINGTON ST	14.17	B

INTERSECTION DELAY = 13.28 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

STUART ST/KNEELAND ST/WASHINGTON ST
1995 BUILD PM PEAK REVISED NETWORK
Date: 04-10-1989 Time: 10:52:21

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=5PM GEOMETRICS=5PM SIGNAL=

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	STUART ST	182	740	73	995	1	2	0	11.0	11.0	0.0	48
WB	KNEELAND ST	107	847	88	1042	0	2	1	0.0	11.0	11.0	48
NB	WASHINGTON ST	109	211	233	553	0	2	0	0.0	12.0	0.0	36
SB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	40

TOTAL VOLUME = 2590

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	Y	15	10	.900	200	Y	15.0	3
WB	0.0%	2.0%	Y	15	10	.900	200	Y	15.0	3
NB	0.0%	2.0%	Y	15	15	.900	200	Y	13.0	3
SB	0.0%	0.0%	N	0	0	.000	200	Y	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1					*	*	*										0.0	0	A
2	*	*	*		*	*	*					*				*	51.0	4	A
3				*				*	*	*	*						21.0	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	182	740	73	.900	202	822	81
WB	107	847	88	.900	119	941	98
NB	109	211	233	.900	121	234	259
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT	202	1	1.00	202	1.00	0.00
EB	TH-RT	903	2	1.05	949	0.00	0.09
WB	LT-TH	1060	2	1.05	1113	0.11	0.00
WB	RT	98	1	1.00	98	0.00	1.00
NB	LT-TH-RT	614	2	1.05	645	0.20	0.42

STUART ST/KNEELAND ST/WASHINGTON ST
1995 BUILD PM PEAK REVISED NETWORK
date: 04-10-1989 time: 10:52:22

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.201	312
EB	TH-RT	1800	2	0.967	0.990	1.000	0.912	0.979	0.900	0.978	1.000	2707
WB	LT-TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.876	2716
WB	RT	1800	1	0.967	0.990	1.000	0.824	0.958	0.900	0.755	1.000	924
NB	LT-TH-RT	1800	2	1.000	0.990	1.000	0.912	0.969	0.900	0.897	0.952	2418

SUPPLEMENTAL WORKSHEET FOR
LEFT-TURN ADJUSTMENT FACTOR FLT
INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	No	Vo	Plto	LGo
EB	80	51	1	202	903	202	1.00	2	1060	0.11	0

CALCULATIONS

DIR	Sop	Yo	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
EB	2781	0.381	33.158	0.213	1.000	17.852	0.000	0.000	5.294	0.201	0.201

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	202	312	0.65	0.64	199	1.02	*
EB	TH-RT	949	2707	0.35	0.64	1726	0.55	
WB	LT-TH	1113	2716	0.41	0.64	1732	0.64	
WB	RT	98	924	0.11	0.64	589	0.17	
NB	LT-TH-RT	645	2418	0.27	0.26	634	1.02	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.92 TOTAL V/C= 1.02

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	1.02	*	0.64	80.0	11.35	199	52.83	0.85	54.56	E	4.8	15
EB	TH-RT	0.55		0.64	80.0	6.14	1726	0.18	0.85	5.37	B	7.3	23
WB	LT-TH	0.64		0.64	80.0	6.76	1732	0.64	0.85	6.29	B	8.5	27
WB	RT	0.17		0.64	80.0	4.46	589	0.00	0.85	3.79	A	0.8	3
NB	LT-TH-RT	1.02	*	0.26	80.0	22.56	634	31.03	0.85	45.56	E	15.1	46

DIR	STREET	DELAY	LOS
EB	STUART ST	14.02	E
WB	KNEELAND ST	6.09	B
NB	WASHINGTON ST	45.56	E

INTERSECTION DELAY = 17.59 INTERSECTION LOS=C

THE EXISTING TIMING IS OPTIMAL

LAGRANGE ST/BEACH ST/WASHINGTON ST

1995 BUILD AM PEAK REVISED NETWORK

Date: 04-10-1989 Time. 10:54:17

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=6AM GEOMETRICS=6AM SIGNAL=

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	LAGRANGE ST	29	0	0	29	1	0	0	12.0	0.0	0.0	22
WB	BEACH ST	0	0	75	75	0	0	1	0.0	0.0	12.0	28
NB	WASHINGTON ST	0	735	0	735	0	2	0	0.0	10.0	0.0	32
SB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	40

TOTAL VOLUME = 839

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	15	0	.900	200	Y	10.0	3
WB	0.0%	2.0%	Y	10	0	.900	200	Y	10.0	3
NB	0.0%	2.0%	N	15	15	.900	200	Y	17.0	3
SB	0.0%	0.0%	N	0	0	.000	200	Y	17.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*											*					4.5	4	A
2				*				*		*							63.1	4	A
3				*			*					*					15.4	4	A

CYCLE= 95.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	29	0	0	.900	32	0	0
WB	0	0	75	.900	0	0	83
NB	0	735	0	.900	0	817	0
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT	32	1	1.00	32	1.00	0.00
WB	RT	83	1	1.00	83	0.00	1.00
NB	TH	817	2	1.05	858	0.00	0.00

LAGRANGE ST/BEACH ST/WASHINGTON ST
1995 BUILD AM PEAK REVISED NETWORK
date: 04-10-1989 time: 10:54:18

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	1.000	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1524
WB	RT	1800	1	1.000	0.990	1.000	0.849	1.000	0.900	0.850	1.000	1157
NB	TH	1800	2	0.933	0.990	1.000	1.000	0.969	0.900	1.000	1.000	2900

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	32	1524	0.02	0.05	72	0.44	*
WB	RT	83	1157	0.07	0.16	187	0.44	*
NB	TH	858	2900	0.30	0.66	1927	0.44	*

CYCLE= 95.0 LOST=12.0 SUM V/S CRIT= 0.39 TOTAL V/C= 0.44

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	0.44	*	0.05	95.0	33.46	72	0.00	1.00	33.46	D	0.8	3
WB	RT	0.44	*	0.16	95.0	27.33	187	0.00	0.85	23.23	C	1.8	6
NB	TH	0.44	*	0.66	95.0	5.77	1927	0.00	0.85	4.91	A	7.2	23

DIR	STREET	DELAY	LOS
EB	LAGRANGE ST	33.46	D
WB	BEACH ST	23.23	C
NB	WASHINGTON ST	4.91	A

INTERSECTION DELAY = 7.42 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

LAGRANGE ST/BEACH ST/WASHINGTON ST
1995 BUILD PM PEAK WITH REVISED NETWORK
Date: 04-10-1989 Time: 10:56:12

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=6PM GEOMETRICS=6PM SIGNAL=

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	LAGRANGE ST	29	0	0	29	1	0	0	12.0	0.0	0.0	22
WB	BEACH ST	0	0	277	277	0	0	1	0.0	0.0	12.0	28
NB	WASHINGTON ST	0	482	0	482	0	2	0	0.0	10.0	0.0	32
SB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	40

TOTAL VOLUME = 788

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	15	0	.900	200	Y	10.0	3
WB	0.0%	2.0%	Y	10	0	.900	200	Y	10.0	3
NB	0.0%	2.0%	N	15	15	.900	200	Y	17.0	3
SB	0.0%	0.0%	N	0	0	.000	200	Y	17.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*											*					3.6	4	A
2				*				*		*							33.5	4	A
3				*			*					*					45.9	4	A

CYCLE= 95.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	29	0	0	.900	32	0	0
WB	0	0	277	.900	0	0	308
NB	0	482	0	.900	0	536	0
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
EB	LT	32	1	1.00	32	1.00	0.00
WB	RT	308	1	1.00	308	0.00	1.00
NB	TH	536	2	1.05	562	0.00	0.00

LAGRANGE ST/BEACH ST/WASHINGTON ST
1995 BUILD PM PEAK WITH REVISED NETWORK
date: 04-10-1989 time: 10:56:13

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	1.000	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1524
WB	RT	1800	1	1.000	0.990	1.000	0.849	1.000	0.900	0.850	1.000	1157
NB	TH	1800	2	0.933	0.990	1.000	1.000	0.969	0.900	1.000	1.000	2900

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	32	1524	0.02	0.04	59	0.55	*
WB	RT	308	1157	0.27	0.48	559	0.55	*
NB	TH	562	2900	0.19	0.35	1022	0.55	*

CYCLE= 95.0 LOST=12.0 SUM V/S CRIT= 0.48 TOTAL V/C= 0.55

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	0.55	*	0.04	95.0	34.10	59	5.14	1.00	39.24	D	0.9	3
WB	RT	0.55	*	0.48	95.0	13.14	559	0.55	0.85	11.64	B	4.2	14
NB	TH	0.55	*	0.35	95.0	18.79	1022	0.30	0.85	16.23	C	9.2	28

DIR	STREET	DELAY	LOS
EB	LAGRANGE ST	39.24	D
WB	BEACH ST	11.64	B
NB	WASHINGTON ST	16.23	C

INTERSECTION DELAY = 15.49 INTERSECTION LOS=C

THE EXISTING TIMING IS OPTIMAL

BOYLSTON ST/ESSEX ST/WASHINGTON ST
1995 BUILD AM PEAK WITH REVISED NETWORK
Date: 04-10-1989 Time: 10:58.36

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=7AM GEOMETRICS=7AM SIGNAL=7AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

DIR	STREET	VOLUMES LT	TH	RT	TOTAL	# OF LANES LT	TH	RT	LANE WIDTH LT	TH	RT	CROSS WALK
EB	BOYLSTON ST	89	1236	0	1325	1	2	0	11.0	11.0	0.0	28
WB	ESSEX ST	0	0	0	0	0	0	0	0.0	0.0	0.0	31
NB	WASHINGTON ST	0	287	552	839	0	1	2	0.0	11.0	11.0	36
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	36

TOTAL VOLUME = 2164

TRAFFIC & ROADWAY CONDITIONS

DIR	GRADE	%HV	ADJ PARK Y/N	MOVES	BUSES	PHF	PEDESTRIANS CROSS	BUT	MIN TIME	ARR TYPE
EB	0.0%	2.0%	N	0	0	.930	200	Y	14.8	3
WB	0.0%	0.0%	N	0	0	.000	200		14.8	0
NB	0.0%	2.0%	N	0	0	.930	550	Y	16.0	3
SB	0.0%	0.0%	N	0	0	.000	750	Y	16.0	3

PHASINGS

	EASTBOUND l	t	r	p	WESTBOUND l	t	r	p	NORTHBOUND l	t	r	p	SOUTHBOUND l	t	r	p	GREEN	Y+R	PRE/ACT
1	*	*										*					33.8	4	A
2				*						*	*						20.2	4	A
3				*				*				*				*	0.0	18	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	89	1236	0	.930	96	1329	0
WB	0	0	0	.000	0	0	0
NB	0	287	552	.930	0	309	594
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT	96	1	1.00	96	1.00	0.00
EB	TH	1329	2	1.05	1395	0.00	0.00
NB	TH	309	1	1.00	309	0.00	0.00
NB	RT	594	2	1.05	623	0.00	1.00

BOYLSTON ST/ESSEX ST/WASHINGTON ST
1995 BUILD AM PEAK WITH REVISED NETWORK
date. 04-10-1989 time: 10:58:37

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1473
EB	TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3101
NB	TH	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	1550
NB	RT	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	0.750	1.000	2326

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	96	1473	0.06	0.42	623	0.15	
EB	TH	1395	3101	0.45	0.42	1312	1.06	*
NB	TH	309	1550	0.20	0.25	391	0.79	
NE	RT	623	2326	0.27	0.25	586	1.06	*

CYCLE= 80.0 LOST=26.0 SUM V/S CRIT= 0.72 TOTAL V/C= 1.06

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	0.15		0.42	80.0	10.82	623	0.00	1.00	10.82	B	1.2	5
EB	TH	1.06	*	0.42	80.0	18.40	1312	34.10	0.85	44.62	E	29.9	91
NB	TH	0.79		0.25	80.0	21.24	391	8.74	0.85	25.48	D	5.4	17
NB	RT	1.06	*	0.25	80.0	23.24	586	43.31	0.85	56.56	E	17.1	52

DIR	STREET	DELAY	LOS
EB	BOYLSTON ST	42.45	E
NB	WASHINGTON ST	46.27	E

INTERSECTION DELAY = 43.92 INTERSECTION LOS=E

THE EXISTING TIMING IS OPTIMAL

BOYLSTON ST/ESSEX ST/WASHINGTON ST
1995 BUILD PM PEAK WITH REVISED NETWORK
Date: 04-10-1999 Time: 11:00:31

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=7PM GEOMETRICS=7PM SIGNAL=7PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	BOYLSTON ST	238	1433	0	1671	1	2	0	11.0	11.0	0.0	26
WB	ESSEX ST	0	0	0	0	0	0	0	0.0	0.0	0.0	31
NB	WASHINGTON ST	0	293	496	789	0	1	2	0.0	11.0	11.0	36
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	36

TOTAL VOLUME = 2460

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	0	.910	200	Y	14.8	3
WB	0.0%	0.0%	N	0	0	.000	200		14.8	0
NB	0.0%	2.0%	N	0	0	.910	590	Y	16.0	3
SB	0.0%	0.0%	N	0	0	.000	750	Y	16.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*	*										*					36.9	4	A
2				*						*	*						17.1	4	A
3				*				*				*				*	0.0	1B	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	238	1433	0	.910	262	1575	0
WB	0	0	0	.000	0	0	0
NB	0	293	496	.910	0	322	545
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
EB	LT	262	1	1.00	262	1.00	0.00
EB	TH	1575	2	1.05	1653	0.00	0.00
NB	TH	322	1	1.00	322	0.00	0.00
NB	RT	545	2	1.05	572	0.00	1.00

BOYLSTON ST/ESSEX ST/WASHINGTON ST
1995 BUILD PM PEAK WITH REVISED NETWORK
date 04-10-1989 time: 11:00:32

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1473
EB	TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3101
NB	TH	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	1550
NB	RT	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	0.750	1.000	2326

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	262	1473	0.18	0.46	680	0.38	
EB	TH	1653	3101	0.53	0.46	1432	1.15	*
NB	TH	322	1550	0.21	0.21	330	0.97	
NB	RT	572	2326	0.25	0.21	496	1.15	*

CYCLE= 80.0 LOST=26.0 SUM V/S CRIT= 0.78 TOTAL V/C= 1.15

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	0.38		0.46	80.0	10.70	680	0.00	1.00	10.70	B	3.1	10
EB	TH	1.15	*	0.46	80.0	18.86	1432	60.67	0.85	67.60	F	47.9	144
NB	TH	0.97		0.21	80.0	23.75	330	32.89	0.85	48.15	E	8.4	26
NB	RT	1.15	*	0.21	80.0	24.97	496	71.21	0.85	81.75	F	20.9	63

DIR	STREET	DELAY	LOS
EB	BOYLSTON ST	59.83	E
NB	WASHINGTON ST	69.65	F

INTERSECTION DELAY = 62.95 INTERSECTION LOS=F

THE EXISTING TIMING IS OPTIMAL

BOYLSTON ST/ESSEX ST/WASHINGTON ST
1995 BUILD SAT PEAK WITH REVISED NETWORK
Date: 04-10-1989 Time: 11:02:16

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=7SAT GEOMETRICS=7SAT SIGNAL=7SAT

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	BOYLSTON ST	190	1267	0	1457	1	2	0	11.0	11.0	0.0	28
WB	ESSEX ST	0	0	0	0	0	0	0	0.0	0.0	0.0	31
NB	WASHINGTON ST	0	156	412	568	0	1	2	0.0	11.0	11.0	36
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	36

TOTAL VOLUME = 2025

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	0	.930	200	Y	14.8	3
WB	0.0%	0.0%	N	0	0	.000	200		14.8	0
NB	0.0%	2.0%	N	0	0	.930	550	Y	16.0	3
SB	0.0%	0.0%	N	0	0	.000	750	Y	16.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*	*										*					37.7	4	A
2				*						*	*						16.3	4	A
3				*				*				*				*	0.0	18	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	190	1267	0	.930	204	1362	0
WB	0	0	0	.000	0	0	0
NB	0	156	412	.930	0	168	443
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT	204	1	1.00	204	1.00	0.00
EB	TH	1362	2	1.05	1430	0.00	0.00
NB	TH	168	1	1.00	168	0.00	0.00
NB	RT	443	2	1.05	465	0.00	1.00

BOYLSTON ST/ESSEX ST/WASHINGTON ST
1995 BUILD SAT PEAK WITH REVISED NETWORK
date: 04-10-1989 time: 11:02:17

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1473
EB	TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3101
NB	TH	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	1550
NB	RT	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	0.750	1.000	2326

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	204	1473	0.14	0.47	694	0.29	
EB	TH	1430	3101	0.46	0.47	1460	0.98	*
NB	TH	168	1550	0.11	0.20	317	0.53	
NB	RT	465	2326	0.20	0.20	475	0.98	*

CYCLE= 80.0 LOST=26.0 SUM V/S CRIT= 0.66 TOTAL V/C= 0.98

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	0.29		0.47	80.0	9.88	694	0.00	1.00	9.88	B	2.4	8
EB	TH	0.98	*	0.47	80.0	15.80	1460	14.57	0.85	25.82	D	20.7	63
NB	TH	0.53		0.20	80.0	21.59	317	0.56	0.85	18.82	C	3.0	10
NB	RT	0.98	*	0.20	80.0	24.07	475	27.79	0.85	44.08	E	11.0	34

DIR	STREET	DELAY	LOS
EB	BOYLSTON ST	23.83	C
NB	WASHINGTON ST	37.39	D

INTERSECTION DELAY = 27.61 INTERSECTION LOS=D

THE EXISTING TIMING IS OPTIMAL

AVERY ST/HAYWARD ST/WASHINGTON ST
1995 BUILD AM PEAK WITH REVISED NETWORK
Date: 04-10-1989 Time: 11:04:20

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=BAM GEOMETRICS=BAM SIGNAL=BAM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

DIR	STREET	VOLUMES LT	TH	RT	TOTAL	# OF LANES LT	TH	RT	LANE WIDTH LT	TH	RT	CROSS WALK
EB	AVERY ST	0	0	0	0	0	0	0	0.0	0.0	0.0	22
WB	HAYWARD ST	0	330	20	350	0	2	0	0.0	12.0	0.0	24
NB	WASHINGTON ST	379	0	0	379	2	0	0	12.0	0.0	0.0	36
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	0

TOTAL VOLUME = 729

TRAFFIC & ROADWAY CONDITIONS

DIR	GRADE	%HV	ADJ PARK Y/N	MOVES	BUSES	PHF	PEDESTRIANS CROSS	BUT	MIN TIME	ARR TYPE
EB	0.0%	0.0%	N	5	0	.000	200	Y	12.5	3
WB	0.0%	2.0%	N	0	0	.900	200	Y	12.5	3
NB	0.0%	2.0%	Y	10	0	.900	200	Y	12.0	3
SB	0.0%	0.0%	N	0	0	.000	200	Y	12.0	0

PHASINGS

	EASTBOUND l	t	r	p	WESTBOUND l	t	r	p	NORTHBOUND l	t	r	p	SOUTHBOUND l	t	r	p	GREEN	Y+R	PRE/ACT
1						*	*					*					31.8	4	A
2								*	*							*	40.2	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	0	330	20	.900	0	367	22
NB	379	0	0	.900	421	0	0
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
WB	TH-RT	389	2	1.05	408	0.00	0.06
NB	LT	421	2	1.05	442	1.00	0.00

AVERY ST/HAYWARD ST/WASHINGTON ST
1995 BUILD AM PEAK WITH REVISED NETWORK
date: 04-10-1989 time: 11:04:21

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	TH-RT	1800	2	1.000	0.990	1.000	1.000	1.000	0.900	0.991	1.000	3180
NB	LT	1800	2	1.000	0.990	1.000	0.925	1.000	0.900	1.000	0.920	2728

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	TH-RT	408	3180	0.13	0.40	1265	0.32	*
NB	LT	442	2728	0.16	0.50	1370	0.32	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.29 TOTAL V/C= 0.32

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	TH-RT	0.32	*	0.40	80.0	12.65	1265	0.00	0.85	10.75	B	5.2	17
NB	LT	0.32	*	0.50	80.0	8.99	1370	0.00	1.00	8.99	B	4.7	15

DIR	STREET	DELAY	LOS
WB	HAYWARD ST	10.75	B
NB	WASHINGTON ST	8.99	B

INTERSECTION DELAY = 9.84 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

AVERY ST/HAYWARD ST/WASHINGTON ST
1995 BUILD PM PEAK WITH REVISED NETWORK
Date: 04-10-1989 Time: 11:07:07

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=BPM GEOMETRICS=BPM SIGNAL=BPM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	AVERY ST	0	0	0	0	0	0	0	0.0	0.0	0.0	22
WB	HAYWARD ST	0	518	30	548	0	2	0	0.0	12.0	0.0	24
NB	WASHINGTON ST	546	0	0	546	2	0	0	12.0	0.0	0.0	36
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	0

TOTAL VOLUME = 1094

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	0.0%	N	5	0	.000	200	Y	12.5	3
WB	0.0%	2.0%	N	0	0	.900	200	Y	12.5	3
NB	0.0%	2.0%	Y	10	0	.900	200	Y	12.0	3
SB	0.0%	0.0%	N	0	0	.000	200	Y	12.0	0

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1						*	*					*					33.3	4	A
2								*	*								38.7	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	0	518	30	.900	0	576	33
NB	546	0	0	.900	607	0	0
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
WB	TH-RT	609	2	1.05	639	0.00	0.05
NB	LT	607	2	1.05	637	1.00	0.00

AVERY ST/HAYWARD ST/WASHINGTON ST
1995 BUILD PM PEAK WITH REVISED NETWORK
date. 04-10-1989 time: 11:07:08

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	TH-RT	1800	2	1.000	0.990	1.000	1.000	1.000	0.900	0.992	1.000	3182
NB	LT	1800	2	1.000	0.990	1.000	0.925	1.000	0.900	1.000	0.920	2728

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	TH-RT	639	3182	0.20	0.42	1325	0.48	*
NB	LT	637	2728	0.23	0.48	1320	0.48	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.43 TOTAL V/C= 0.48

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	TH-RT	0.48	*	0.42	80.0	12.96	1325	0.00	0.85	11.02	B	7.9	25
NB	LT	0.48	*	0.48	80.0	10.57	1320	0.00	1.00	10.57	B	7.0	22

DIR	STREET	DELAY	LOS
WB	HAYWARD ST	11.02	B
NB	WASHINGTON ST	10.57	B

INTERSECTION DELAY = 10.80 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

HARRISON AVR/STUART ST/KNEELAND ST
1995 BUILD AM PEAK WITH REVISED NETWORK
Date: 04-10-1989 Time: 12:08:20

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=11AM GEOMETRICS=11AM SIGNAL=11AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	STUART ST	0	768	80	848	0	2	1	0.0	11.0	11.0	60
WB	KNEELAND ST	76	768	0	844	0	3	0	0.0	11.0	0.0	60
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	26
SB	HARRISON AVE	133	74	92	299	0	1	0	0.0	12.0	0.0	26

TOTAL VOLUME = 1991

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	Y	10	10	.960	200	Y	18.0	3
WB	0.0%	2.0%	Y	10	10	.960	200	Y	18.0	3
NB	0.0%	0.0%	N	0	0	.000	0		9.5	0
SB	0.0%	2.0%	Y	5	5	.960	200	Y	9.5	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1		*	*		*	*						*				*	34.2	4	A
2				*				*					*	*	*		37.8	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	768	80	.960	0	800	83
WB	76	768	0	.960	79	800	0
NB	0	0	0	.000	0	0	0
SB	133	74	92	.960	139	77	96

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	TH	800	2	1.05	840	0.00	0.00
EB	RT	83	1	1.00	83	0.00	1.00
WB	LT-TH	879	3	1.10	967	0.09	0.00
SB	LT-TH-RT	311	1	1.00	311	0.44	0.31

HARRISON AVR/STUART ST/KNEELAND ST
1995 BUILD AM PEAK WITH REVISED NETWORK
date: 04-10-1989 time. 12:08:21

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH	1600	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	2756
EB	RT	1600	1	0.967	0.990	1.000	0.849	0.958	0.900	0.850	1.000	953
WB	LT-TH	1600	3	0.967	0.990	1.000	0.950	0.986	0.900	1.000	0.806	3121
SB	LT-TH-RT	1800	1	1.000	0.990	1.000	0.875	0.979	0.900	0.829	0.798	908

SUPPLEMENTAL WORKSHEET FOR
LEFT-TURN ADJUSTMENT FACTOR FLT
INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	No	Vo	Plto	LGo
WB	80	34	3	879	879	79	0.09	2	800	0.00	0

CALCULATIONS

DIR	Sop	Yo	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
WB	3600	0.222	21.092	0.375	0.586	13.091	0.414	1.408	3.000	0.418	0.806

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH	840	2756	0.30	0.43	1178	0.71	
EB	RT	83	953	0.09	0.43	407	0.20	
WB	LT-TH	967	3121	0.31	0.43	1334	0.73	*
SB	LT-TH-RT	311	908	0.34	0.47	429	0.73	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.65 TOTAL V/C= 0.73

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH	0.71		0.43	80.0	14.34	1178	1.72	0.85	13.65	B	10.2	31
EB	RT	0.20		0.43	80.0	10.93	407	0.00	0.85	9.29	B	1.1	4
WB	LT-TH	0.73	*	0.43	80.0	14.45	1334	1.67	0.85	13.70	B	11.2	34
SB	LT-TH-RT	0.73	*	0.47	80.0	12.86	429	5.03	0.85	15.21	C	3.6	12

DIR	STREET	DELAY	LOS
EB	STUART ST	13.26	B
WB	KNEELAND ST	13.70	B
SB	HARRISON AVE	15.21	C

INTERSECTION DELAY = 13.73 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

HARRISON AVE/STUART ST/KNEELAND ST
1995 BUILD PM PEAK WITH REVISED NETWORK
Date. 04-10-1989 Time: 12:11:11

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=11PM GEOMETRICS=11PM SIGNAL=11PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	STUART ST	0	885	79	964	0	2	1	0.0	11.0	11.0	60
WB	KNEELAND ST	102	907	0	1009	0	3	0	0.0	11.0	0.0	60
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	26
SB	HARRISON AVE	379	184	128	691	0	1	0	0.0	12.0	0.0	26

TOTAL VOLUME = 2664

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	Y	10	10	.950	200	Y	18.0	3
WB	0.0%	2.0%	Y	10	10	.950	200	Y	18.0	3
NB	0.0%	0.0%	N	0	0	.000	0		9.5	0
SB	0.0%	2.0%	Y	5	5	.950	200	Y	9.5	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1		*	*		*	*						*				*	24.3	4	A
2				*				*					*	*	*		47.7	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	885	79	.950	0	932	83
WB	102	907	0	.950	107	955	0
NB	0	0	0	.000	0	0	0
SB	379	184	128	.950	399	194	135

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	TH	932	2	1.05	978	0.00	0.00
EB	RT	83	1	1.00	83	0.00	1.00
WB	LT-TH	1062	3	1.10	1168	0.10	0.00
SB	LT-TH-RT	727	1	1.00	727	0.55	0.19

HARRISON AVE/STUART ST/KNEELAND ST
1995 BUILD PM PEAK WITH REVISED NETWORK
date: 04-10-1989 time: 12:11:12

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH	1600	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	2756
EB	RT	1600	1	0.967	0.990	1.000	0.849	0.958	0.900	0.850	1.000	953
WB	LT-TH	1600	3	0.967	0.990	1.000	0.950	0.986	0.900	1.000	0.740	2865
SB	LT-TH-RT	1800	1	1.000	0.990	1.000	0.875	0.979	0.900	0.857	0.774	911

SUPPLEMENTAL WORKSHEET FOR
LEFT-TURN ADJUSTMENT FACTOR FLT
INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	No	Vo	Plto	LGo
WB	80	24	3	1062	1062	107	0.10	2	932	0.00	0

CALCULATIONS

DIR	Sop	Yo	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
WB	3600	0.259	4.908	0.293	0.930	19.432	0.070	0.151	3.843	0.220	0.740

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH	978	2756	0.35	0.30	839	1.17	
EB	RT	63	953	0.09	0.30	290	0.29	
WB	LT-TH	1168	2865	0.41	0.30	872	1.34	*
SB	LT-TH-RT	727	911	0.80	0.60	543	1.34	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 1.21 TOTAL V/C= 1.34

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH	1.17		0.30	80.0	22.81	839	68.65	0.85	77.74	F	33.4	101
EB	RT	0.29		0.30	80.0	16.12	290	0.00	0.85	13.70	B	1.3	5
WB	LT-TH	1.34	*	0.30	80.0	24.85	872	125.07	0.85	127.43	F	57.1	172
SB	LT-TH-RT	1.34	*	0.60	80.0	24.64	543	129.15	0.85	130.72	F	37.6	114

DIR	STREET	DELAY	LOS
EB	STUART ST	72.73	F
WB	KNEELAND ST	127.43	F
SB	HARRISON AVE	130.72	F

INTERSECTION DELAY =108.60 INTERSECTION LOS=F

THE EXISTING TIMING IS OPTIMAL

CHAUNCY ST/AVE DE LAFAYETTE
1995 BUILD AM PEAK WITH REVISED NETWORK
Date: 04-10-1989 Time: 12:14:48

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=15AM GEOMETRICS=15AM SIGNAL=15AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	AVE DE LAFAYETTE	0	0	0	0	0	0	0	0.0	0.0	0.0	0
WB	AVE DE LAFAYETTE	0	461	85	546	0	2	0	0.0	11.0	0.0	44
NB	CHAUNCY ST	261	520	0	781	1	1	0	11.0	10.0	0.0	40
SB	CHAUNCY ST	0	0	189	189	0	0	1	0.0	0.0	14.0	36

TOTAL VOLUME = 1516

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.000	15		11.0	3
WB	0.0%	2.0%	Y	10	10	.900	180	N	11.0	3
NB	0.0%	2.0%	Y	10	20	.900	100	N	13.0	3
SB	0.0%	2.0%	N	0	25	.900	310	N	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1								*				*			*		12.6	3	A
2						*	*					*				*	18.6	3	A
3			*					*	*	*							38.8	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	0	461	85	.900	0	512	94
NB	261	520	0	.900	290	578	0
SB	0	0	189	.900	0	0	210

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
WB	TH-RT	607	2	1.05	637	0.00	0.16
NB	LT	290	1	1.00	290	1.00	0.00
NB	TH	578	1	1.00	578	0.00	0.00
SB	RT	210	1	1.00	210	0.00	1.00

CHAUNCY ST/AVE DE LAFAYETTE
1995 BUILD AM PEAK WITH REVISED NETWORK
date: 04-10-1989 time: 12:14:49

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	TH-RT	1800	2	0.967	0.990	1.000	0.925	0.979	0.900	0.954	1.000	2677
NB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1473
NB	TH	1800	1	0.933	0.990	1.000	0.849	0.917	0.900	1.000	1.000	1165
SB	RT	1800	1	1.067	0.990	1.000	1.000	0.896	0.900	0.850	1.000	1303

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	TH-RT	637	2677	0.24	0.23	623	1.02	*
NB	LT	290	1473	0.20	0.48	714	0.41	
NB	TH	578	1165	0.50	0.48	565	1.02	*
SB	RT	210	1303	0.16	0.16	205	1.02	*

CYCLE= 80.0 LOST=10.0 SUM V/S CRIT= 0.90 TOTAL V/C= 1.02

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	TH-RT	1.02	*	0.23	80.0	23.49	623	32.60	0.85	47.68	E	15.6	
NB	LT	0.41		0.48	80.0	10.05	714	0.00	1.00	10.05	B	3.3	
NB	TH	1.02	*	0.48	80.0	16.01	565	34.01	0.85	42.51	E	12.2	
SB	RT	1.02	*	0.16	80.0	25.72	205	53.52	0.85	67.35	F	7.1	

DIR	STREET	DELAY	LOS
WB	AVE DE LAFAYETTE	47.68	E
NB	CHAUNCY ST	31.66	D
SB	CHAUNCY ST	67.35	F

INTERSECTION DELAY = 41.98 INTERSECTION LOS=E

THE EXISTING TIMING IS OPTIMAL

CHAUNCY ST/AVE DE LAFAYETTE

1995 BUILD PM PEAK WITH REVISED NETWORK]

Date: 04-10-1989 Time: 12.19:31

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=15PM GEOMETRICS=15PM SIGNAL=15PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	AVE DE LAFAYETTE	0	0	0	0	0	0	0	0.0	0.0	0.0	0
WB	AVE DE LAFAYETTE	0	353	96	449	0	2	0	0.0	11.0	0.0	44
NB	CHAUNCY ST	122	397	0	519	1	1	0	11.0	10.0	0.0	40
SB	CHAUNCY ST	0	0	282	282	0	0	1	0.0	0.0	14.0	36

TOTAL VOLUME = 1250

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.000	15		11.0	3
WB	0.0%	2.0%	Y	10	10	.900	180	N	11.0	3
NB	0.0%	2.0%	Y	10	20	.900	100	N	13.0	3
SB	0.0%	2.0%	N	0	25	.900	310	N	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1								*				*			*		20.6	3	A
2						*	*					*				*	17.0	3	A
3			*					*	*	*							32.4	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	0	353	96	.900	0	392	107
NB	122	397	0	.900	136	441	0
SB	0	0	282	.900	0	0	313

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
WB	TH-RT	499	2	1.05	524	0.00	0.21
NB	LT	136	1	1.00	136	1.00	0.00
NB	TH	441	1	1.00	441	0.00	0.00
SB	RT	313	1	1.00	313	0.00	1.00

CHAUNCY ST/AVE DE LAFAYETTE

1995 BUILD PM PEAK WITH REVISED NETWORK]

date 04-10-1989 time: 12:19:32

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	TH-RT	1800	2	0.967	0.990	1.000	0.925	0.979	0.900	0.936	1.000	2629
NB	LT	1600	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1473
NB	TH	1800	1	0.933	0.990	1.000	0.849	0.917	0.900	1.000	1.000	1165
SB	RT	1800	1	1.067	0.990	1.000	1.000	0.896	0.900	0.850	1.000	1303

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	TH-RT	524	2629	0.20	0.21	560	0.94	*
NB	LT	136	1473	0.09	0.40	596	0.23	
NB	TH	441	1165	0.38	0.40	472	0.94	*
SB	RT	313	1303	0.24	0.26	335	0.94	*

CYCLE= 80.0 LOST=10.0 SUM V/S CRIT= 0.82 TOTAL V/C= 0.94

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	TH-RT	0.94	*	0.21	80.0	23.51	560	18.30	0.85	35.54	D	10.8	33
NB	LT	0.23		0.40	80.0	11.86	596	0.00	1.00	11.86	B	1.8	6
NB	TH	0.94	*	0.40	80.0	17.33	472	20.58	0.85	32.23	D	8.1	25
SB	RT	0.94	*	0.26	80.0	22.09	335	25.92	0.85	40.72	E	7.2	23

DIR	STREET	DELAY	LOS
WB	AVE DE LAFAYETTE	35.54	D
NB	CHAUNCY ST	27.44	D
SB	CHAUNCY ST	40.72	E

INTERSECTION DELAY = 33.39 INTERSECTION LOS=D

THE EXISTING TIMING IS OPTIMAL

CHAUNCY ST/AVE DE LAFAYETTE

1995 BUILD SAT PEAK WITH REVISED NETWORK

Date 04-10-1989 Time. 12.24:07

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=15SAT GEOMETRICS=15SAT SIGNAL=15SAT

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	AVE DE LAFAYETTE	0	0	0	0	0	0	0	0.0	0.0	0.0	0
WB	AVE DE LAFAYETTE	0	298	56	354	0	2	0	0.0	11.0	0.0	44
NB	CHAUNCY ST	142	395	0	537	1	1	0	11.0	10.0	0.0	40
SB	CHAUNCY ST	0	0	219	219	0	0	1	0.0	0.0	14.0	36

TOTAL VOLUME = 1110

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.000	15		11.0	3
WB	0.0%	2.0%	Y	10	10	.900	180	N	11.0	3
NB	0.0%	2.0%	Y	10	20	.900	100	N	13.0	3
SB	0.0%	2.0%	N	0	25	.900	310	N	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1								*				*			*		18.2	3	A
2						*	*					*				*	15.1	3	A
3			*					*	*	*							36.7	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	0	298	56	.900	0	331	62
NB	142	395	0	.900	158	439	0
SB	0	0	219	.900	0	0	243

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
WB	TH-RT	393	2	1.05	413	0.00	0.16
NB	LT	158	1	1.00	158	1.00	0.00
NB	TH	439	1	1.00	439	0.00	0.00
SB	RT	243	1	1.00	243	0.00	1.00

CHAUNCY ST/AVE DE LAFAYETTE

1995 BUILD SAT PEAK WITH REVISED NETWORK

date 04-10-1989 time: 12:24:06

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	TH-RT	1800	2	0.967	0.990	1.000	0.925	0.979	0.900	0.953	1.000	2675
NB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1473
NB	TH	1800	1	0.933	0.990	1.000	0.849	0.917	0.900	1.000	1.000	1165
SB	RT	1800	1	1.067	0.990	1.000	1.000	0.896	0.900	0.850	1.000	1303

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	TH-RT	413	2675	0.15	0.19	503	0.82	*
NB	LT	158	1473	0.11	0.46	676	0.23	
NB	TH	439	1165	0.38	0.46	535	0.82	*
SB	RT	243	1303	0.19	0.23	297	0.82	*

CYCLE= 60.0 LOST=10.0 SUM V/S CRIT= 0.72 TOTAL V/C= 0.82

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	TH-RT	0.82	*	0.19	80.0	23.69	503	8.62	0.85	27.46	D	7.4	23
NB	LT	0.23		0.46	80.0	9.96	676	0.00	1.00	9.96	B	1.9	7
NB	TH	0.82	*	0.46	80.0	14.27	535	8.16	0.85	19.06	C	5.7	18
SB	RT	0.82	*	0.23	80.0	22.30	297	13.65	0.85	30.56	D	4.8	15

DIR	STREET	DELAY	LOS
WB	AVE DE LAFAYETTE	27.46	D
NB	CHAUNCY ST	16.66	C
SB	CHAUNCY ST	30.56	D

INTERSECTION DELAY = 22.92 INTERSECTION LOS=C

THE EXISTING TIMING IS OPTIMAL

CHAUNCY ST/ARCH ST/SUMMER ST

1995 BUILD AM PEAK WITH REVISED NETWORK

Date: 04-10-1989 Time: 12:30:59

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=17AM GEOMETRICS=17AM SIGNAL=17AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	SUMMER ST	21	47	0	68	0	1	0	0.0	10.0	0.0	30
WB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
NB	CHAUNCY ST	0	360	85	445	0	1	0	0.0	10.0	0.0	30
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	0

TOTAL VOLUME = 513

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	Y	5	0	.960	300	Y	10.5	3
WB	0.0%	0.0%	N	0	0	.000	300	Y	10.5	0
NB	0.0%	2.0%	Y	5	0	.960	400	Y	10.5	3
SB	0.0%	0.0%	N	0	0	.000	400	Y	10.5	0

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1				*				*		*	*						44.8	4	A
2	*	*										*				*	7.2	4	A

CYCLE= 60.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	21	47	0	.960	22	49	0
WB	0	0	0	.000	0	0	0
NB	0	360	85	.960	0	375	89
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT-TH	71	1	1.00	71	0.31	0.00
NB	TH-RT	464	1	1.00	464	0.00	0.19

CHAUNCY ST/ARCH ST/SUMMER ST

1995 BUILD AM PEAK WITH REVISED NETWORK

date: 04-10-1989 time: 12:31:00

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH	1800	1	0.933	0.990	1.000	0.875	1.000	0.900	1.000	0.799	1047
NB	TH-RT	1800	1	0.933	0.990	1.000	0.875	1.000	0.900	0.847	1.000	1109

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH	71	1047	0.07	0.12	126	0.56	*
NB	TH-RT	464	1109	0.42	0.75	827	0.56	*

CYCLE= 60.0 LOST= 8.0 SUM V/S CRIT= 0.49 TOTAL V/C= 0.56

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH	0.56	*	0.12	60.0	18.91	126	2.96	0.85	18.58	C	1.0	
NB	TH-RT	0.56	*	0.75	60.0	2.53	827	0.46	0.85	2.54	A	2.0	

DIR	STREET	DELAY	LOS
EB	SUMMER ST	18.58	C
NB	CHAUNCY ST	2.54	A

INTERSECTION DELAY = 4.67 INTERSECTION LOS=A

THE EXISTING TIMING IS OPTIMAL

CHAUNCY ST/ARCH ST/SUMMER ST
1995 BUILD PM PEAK WITH REVISED NETWORK
Date 04-10-1989 Time: 14:10.35

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=17PM GEOMETRICS=17PM SIGNAL=17PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

DIR	STREET	VOLUMES LT	TH	RT	TOTAL	# OF LANES LT	TH	RT	LANE WIDTH LT	TH	RT	CROSS WALK
EB	SUMMER ST	46	96	0	142	0	1	0	0.0	10.0	0.0	30
WB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
NB	CHAUNCY ST	0	359	199	558	0	1	0	0.0	10.0	0.0	30
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	0

TOTAL VOLUME = 700

TRAFFIC & ROADWAY CONDITIONS

DIR	GRADE	%HV	ADJ PARK Y/N	MOVES	BUSES	PHF	PEDESTRIANS CROSS	BUT	MIN	TIME	ARR TYPE
EB	0.0%	2.0%	Y	5	0	.860	375	Y		10.5	3
WB	0.0%	0.0%	N	0	0	.000	375	Y		10.5	0
NB	0.0%	2.0%	Y	5	0	.860	500	Y		10.5	3
SB	0.0%	0.0%	N	0	0	.000	500	Y		10.5	0

PHASINGS

	EASTBOUND l	t	r	p	WESTBOUND l	t	r	p	NORTHBOUND l	t	r	p	SOUTHBOUND l	t	r	p	GREEN	Y+R	PRE/ACT
1				*				*		*	*						41.4	4	A
2	*	*										*				*	10.6	4	A

CYCLE= 60.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	46	96	0	.860	53	112	0
WB	0	0	0	.000	0	0	0
NB	0	359	199	.860	0	417	231
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT-TH	165	1	1.00	165	0.32	0.00
NB	TH-RT	649	1	1.00	649	0.00	0.36

CHAUNCY ST/ARCH ST/SUMMER ST
1995 BUILD PM PEAK WITH REVISED NETWORK
date 04-10-1989 time: 14:10:36

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH	1800	1	0.933	0.990	1.000	0.875	1.000	0.900	1.000	0.779	1020
NB	TH-RT	1800	1	0.933	0.990	1.000	0.875	1.000	0.900	0.788	1.000	1032

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH	165	1020	0.16	0.18	181	0.91	*
NB	TH-RT	649	1032	0.63	0.69	711	0.91	*

CYCLE= 60.0 LOST= 8.0 SUM V/S CRIT= 0.79 TOTAL V/C= 0.91

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CN	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH	0.91	*	0.18	60.0	18.41	181	33.95	0.85	44.50	E	3.8	12
NB	TH-RT	0.91	*	0.69	60.0	5.93	711	12.86	0.85	15.97	C	5.4	17

DIR	STREET	DELAY	LOS
EB	SUMMER ST	44.50	E
NB	CHAUNCY ST	15.97	C

INTERSECTION DELAY = 21.76 INTERSECTION LOS=C

THE EXISTING TIMING IS OPTIMAL

CHAUNCY ST/ARCH ST/SUMMER ST
1995 BUILD SAT PEAK WITH REVISED NETWORK
Date. 04-10-1989 Time: 14:11:53

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=17SAT GEOMETRICS=17SAT SIGNAL=17SAT

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	SUMMER ST	61	126	0	187	0	1	0	0.0	10.0	0.0	30
WB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
NB	CHAUNCY ST	0	286	158	444	0	1	0	0.0	10.0	0.0	30
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	0

TOTAL VOLUME = 631

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	Y	5	0	.910	375	Y	10.5	3
WB	0.0%	0.0%	N	0	0	.000	375	Y	10.5	0
NB	0.0%	2.0%	Y	5	0	.910	500	Y	10.5	3
SB	0.0%	0.0%	N	0	0	.000	500	Y	10.5	0

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1				*				*		*	*						36.4	4	A
2	*	*										*				*	15.6	4	A

CYCLE= 60.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	61	126	0	.910	67	138	0
WB	0	0	0	.000	0	0	0
NB	0	286	158	.910	0	314	174
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT-TH	205	1	1.00	205	0.33	0.00
NB	TH-RT	488	1	1.00	488	0.00	0.36

CHAUNCY ST/ARCH ST/SUMMER ST

1995 BUILD SAT PEAK WITH REVISED NETWORK

date: 04-10-1989 time: 14:11:54

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH	1800	1	0.933	0.990	1.000	0.875	1.000	0.900	1.000	0.778	1019
NB	TH-RT	1800	1	0.933	0.990	1.000	0.875	1.000	0.900	0.788	1.000	1032

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH	205	1019	0.20	0.26	264	0.78	*
NB	TH-RT	488	1032	0.47	0.61	627	0.78	*

CYCLE= 60.0 LOST= 8.0 SUM V/S CRIT= 0.67 TOTAL V/C= 0.78

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH	0.78	*	0.26	60.0	15.67	264	11.44	0.85	23.04	C	3.0	10
NB	TH-RT	0.78	*	0.61	60.0	6.66	627	5.18	0.85	10.07	B	3.4	11

DIR	STREET	DELAY	LOS
EB	SUMMER ST	23.04	C
NB	CHAUNCY ST	10.07	B

INTERSECTION DELAY = 13.91 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

KINGSTON ST/AVE DE LAFAYETTE/ESSEX ST
1995 BUILD AM PEAK WITH REVISED NETWORK
Date: 04-10-1989 Time. 14:14.07

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=18AM GEOMETRICS=18AM SIGNAL=18AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

DIR	STREET	VOLUMES LT	TH	RT	TOTAL	# OF LANES LT	TH	RT	LANE WIDTH LT	TH	RT	CROSS WALK
EB	ESSEX ST	0	674	36	710	0	2	0	0.0	12.0	0.0	60
WB	ESSEX ST	0	510	0	510	0	2	0	0.0	12.0	0.0	60
NB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	56
SB	KINGSTON ST	301	104	35	440	0	2	0	0.0	12.0	0.0	30

TOTAL VOLUME = 1660

TRAFFIC & ROADWAY CONDITIONS

DIR	GRADE	%HV	ADJ PARK Y/N	MOVES	BUSES	PHF	PEDESTRIANS CROSS	BUT	MIN TIME	ARR TYPE
EB	0.0%	2.0%	N	0	10	.870	300	Y	18.0	3
WB	0.0%	2.0%	N	10	10	.870	200	Y	18.0	3
NB	0.0%	0.0%	N	0	0	.000	90	Y	17.0	3
SB	0.0%	2.0%	N	0	10	.870	380	Y	17.0	3

PHASINGS

	EASTBOUND l	t	r	p	WESTBOUND l	t	r	p	NORTHBOUND l	t	r	p	SOUTHBOUND l	t	r	p	GREEN	Y+R	PRE/ACT
1				*				*					*	*	*		31.0	4	A
2		*	*			*						*				*	41.0	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	674	36	.870	0	775	41
WB	0	510	0	.870	0	586	0
NB	0	0	0	.000	0	0	0
SB	301	104	35	.870	346	120	40

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	TH-RT	816	2	1.05	857	0.00	0.05
WB	TH	586	2	1.05	616	0.00	0.00
SB	LT-TH-RT	506	2	1.05	531	0.68	0.08

KINGSTON ST/AVE DE LAFAYETTE/ESSEX ST
1995 BUILD AM PEAK WITH REVISED NETWORK
date 04-10-1989 time. 14 14.08

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH-RT	1800	2	1.000	0.990	1.000	1.000	0.979	0.900	0.990	1.000	3110
WE	Th	1800	2	1.000	0.990	1.000	1.000	0.979	0.900	1.000	1.000	3141
SB	LT-TH-RT	1800	2	1.000	0.990	1.000	1.000	0.979	0.900	0.977	0.832	2553

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH-RT	857	3110	0.28	0.51	1595	0.54	*
WE	TH	616	3141	0.20	0.51	1611	0.38	
SB	LT-TH-RT	531	2553	0.21	0.39	989	0.54	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.48 TOTAL V/C= 0.54

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH-RT	0.54	*	0.51	80.0	9.96	1595	0.14	0.85	8.58	B	8.8	27
WB	TH	0.38		0.51	80.0	8.97	1611	0.00	0.85	7.63	B	6.3	20
SB	LT-TH-RT	0.54	*	0.39	80.0	14.42	989	0.22	0.85	12.44	B	6.9	22

DIR	STREET	DELAY	LOS
EB	ESSEX ST	8.58	B
WE	ESSEX ST	7.63	B
SB	KINGSTON ST	12.44	B

INTERSECTION DELAY = 9.31 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

ESSEX ST/KINGSTON ST/AVE DE LAFAYETTE
1995 BUILD PM PEAK WITH REVISED NETWORK
Date 04-10-1989 Time: 14 19:02

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=18PM GEOMETRICS=18PM SIGNAL=18PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	ESSEX ST	0	1187	121	1308	0	2	0	0.0	12.0	0.0	60
WB	ESSEX ST	0	353	0	353	0	2	0	0.0	12.0	0.0	80
NB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	56
SB	KINGSTON ST	626	345	94	1065	0	2	0	0.0	12.0	0.0	30

TOTAL VOLUME = 2726

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.870	300	Y	18.0	3
WB	0.0%	2.0%	N	10	10	.870	200	Y	18.0	3
NB	0.0%	0.0%	N	0	0	.000	90	Y	17.0	3
SB	0.0%	2.0%	N	0	10	.870	380	Y	17.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1				*				*					*	*	*		35.2	4	A
2		*	*			*						*				*	36.8	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	1187	121	.870	0	1364	139
WB	0	353	0	.870	0	406	0
NB	0	0	0	.000	0	0	0
SB	626	345	94	.870	720	397	108

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	TH-RT	1503	2	1.05	1579	0.00	0.09
WB	TH	406	2	1.05	426	0.00	0.00
SB	LT-TH-RT	1224	2	1.05	1285	0.59	0.09

ESSEX ST/KINGSTON ST/AVE DE LAFAYETTE

1995 BUILD PM PEAK WITH REVISED NETWORK

date: 04-10-1989 time: 14.19:03

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH-RT	1800	2	1.000	0.990	1.000	1.000	0.979	0.900	0.982	1.000	3085
WB	TH	1800	2	1.000	0.990	1.000	1.000	0.979	0.900	1.000	1.000	3141
SB	LT-TH-RT	1800	2	1.000	0.990	1.000	1.000	0.979	0.900	0.974	0.856	2619

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH-RT	1579	3085	0.51	0.46	1417	1.11	*
WB	TH	426	3141	0.14	0.46	1443	0.30	
SB	LT-TH-RT	1285	2619	0.49	0.44	1154	1.11	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 1.00 TOTAL V/C= 1.11

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH-RT	1.11	*	0.46	80.0	18.20	1417	48.05	0.85	56.30	E	39.6	120
WB	TH	0.30		0.46	80.0	10.28	1443	0.00	0.85	8.74	B	4.9	16
SB	LT-TH-RT	1.11	*	0.44	80.0	18.68	1154	49.67	0.85	58.10	E	33.3	101

DIR	STREET	DELAY	LOS
EB	ESSEX ST	56.30	E
WB	ESSEX ST	8.74	B
SB	KINGSTON ST	58.10	E

INTERSECTION DELAY = 50.85 INTERSECTION LOS=E

THE EXISTING TIMING IS OPTIMAL

KINGSTON ST/OTIS ST/SUMMER ST
1995 BUILD AM PEAK WITH REVISED NETWORK
Date: 04-10-1989 Time: 14:23:34

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=20AM GEOMETRICS=20AM SIGNAL=20AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	SUMMER ST	0	74	57	131	0	1	1	0.0	10.0	10.0	25
WB	SUMMER ST	200	0	0	200	1	0	0	10.0	0.0	0.0	32
NB	KINGSTON ST	0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	OTIS ST	56	189	0	245	1	1	0	10.0	10.0	0.0	25

TOTAL VOLUME = 576

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	Y	10	0	.880	400	N	11.0	3
WB	0.0%	2.0%	N	0	0	.880	400	N	11.0	3
NB	0.0%	0.0%	N	0	0	.000	0		9.3	3
SB	0.0%	2.0%	N	0	0	.880	400	N	9.3	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1		*	*		*							*				*	41.1	4	A
2				*				*					*	*			30.9	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	74	57	.880	0	84	65
WB	200	0	0	.880	227	0	0
NB	0	0	0	.000	0	0	0
SB	56	189	0	.880	64	215	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	TH	84	1	1.00	84	0.00	0.00
EB	RT	65	1	1.00	65	0.00	1.00
WB	LT	227	1	1.00	227	1.00	0.00
SB	LT	64	1	1.00	64	1.00	0.00
SB	TH	215	1	1.00	215	0.00	0.00

KINGSTON ST/OTIS ST/SUMMER ST

1995 BUILD AM PEAK WITH REVISED NETWORK

Date 04-10-1989 time: 14.23.35

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH	1800	1	0.933	0.990	1.000	1.000	1.000	0.900	1.000	1.000	1497
EB	RT	1800	1	0.933	0.990	1.000	0.849	1.000	0.900	0.850	1.000	1080
WB	LT	1800	1	0.933	0.990	1.000	1.000	1.000	0.900	1.000	0.794	1189
SB	LT	1800	1	0.933	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1422
SB	TH	1800	1	0.933	0.990	1.000	1.000	1.000	0.900	1.000	1.000	1497

SUPPLEMENTAL WORKSHEET FOR

LEFT-TURN ADJUSTMENT FACTOR FLT

INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	No	Vo	Plto	LGo
WB	80	41	1	227	0	227	1.00	1	84	0.00	0

CALCULATIONS

DIR	Sop	Yo	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
WB	1800	0.047	39.216	0.822	1.000	1.905	0.000	0.000	1.368	0.794	0.794

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH	84	1497	0.06	0.51	769	0.11	
EB	RT	65	1080	0.06	0.51	555	0.12	
WB	LT	227	1189	0.19	0.51	611	0.37	*
SB	LT	64	1422	0.04	0.39	549	0.12	
SB	TH	215	1497	0.14	0.39	578	0.37	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.33 TOTAL V/C= 0.37

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH	0.11		0.51	80.0	7.61	769	0.00	0.85	6.47	B	0.9	4
EB	RT	0.12		0.51	80.0	7.64	555	0.00	0.85	6.49	B	0.7	3
WB	LT	0.37	*	0.51	80.0	8.88	611	0.00	0.85	7.54	B	2.5	8
SB	LT	0.12		0.39	80.0	12.00	549	0.00	1.00	12.00	B	0.9	3
SB	TH	0.37	*	0.39	80.0	13.38	578	0.00	0.85	11.37	B	2.9	10

DIR	STREET	DELAY	LOS
EB	SUMMER ST	6.48	B
WB	SUMMER ST	7.54	B
SB	OTIS ST	11.52	B

INTERSECTION DELAY = 8.99 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

KINGSTON ST/OTIS ST/SUMMER ST
1995 BUILD PM PEAK WITH REVISED NETWORK
Date: 04-10-1989 Time: 14:33 46

1985 HCM - CHAPTER 9. SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=20PM GEOMETRICS=20PM SIGNAL=20PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	SUMMER ST	0	205	91	296	0	1	1	0.0	10.0	10.0	25
WB	SUMMER ST	149	0	0	149	1	0	0	10.0	0.0	0.0	32
NB	KINGSTON ST	0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	OTIS ST	95	378	0	473	1	1	0	10.0	10.0	0.0	25

TOTAL VOLUME = 918

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK			PEDESTRIANS				ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	Y	10	0	.980	400	N	11.0	3
WB	0.0%	2.0%	N	0	0	.980	400	N	11.0	3
NB	0.0%	0.0%	N	0	0	.000	0		9.3	3
SB	0.0%	2.0%	N	0	0	.980	400	N	9.3	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1		*	*		*							*				*	27.4	4	A
2				*				*					*	*			44.6	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	205	91	.980	0	209	93
WB	149	0	0	.980	152	0	0
NB	0	0	0	.000	0	0	0
SB	95	378	0	.980	97	386	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	TH	209	1	1.00	209	0.00	0.00
EB	RT	93	1	1.00	93	0.00	1.00
WB	LT	152	1	1.00	152	1.00	0.00
SB	LT	97	1	1.00	97	1.00	0.00
SB	TH	386	1	1.00	386	0.00	0.00

KINGSTON ST/OTIS ST/SUMMER ST

1995 BUILD PM PEAK WITH REVISED NETWORK

date 04-10-1989 time 14.33:47

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH	1800	1	0.933	0.990	1.000	1.000	1.000	0.900	1.000	1.000	1497
EB	RT	1800	1	0.933	0.990	1.000	0.849	1.000	0.900	0.850	1.000	1080
WB	LT	1800	1	0.933	0.990	1.000	1.000	1.000	0.900	1.000	0.641	959
SB	LT	1800	1	0.933	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1422
SB	TH	1800	1	0.933	0.990	1.000	1.000	1.000	0.900	1.000	1.000	1497

SUPPLEMENTAL WORKSHEET FOR

LEFT-TURN ADJUSTMENT FACTOR FLT

INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	No	Vo	Pltc	LGo
WB	80	27	1	152	0	152	1.00	1	209	0.00	0

CALCULATIONS

DIR	Sop	Yc	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
WB	1800	0.116	20.511	0.744	1.000	6.913	0.000	0.000	1.512	0.641	0.641

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH	209	1497	0.14	0.34	513	0.41	
EB	RT	93	1080	0.09	0.34	370	0.25	
WB	LT	152	959	0.16	0.34	329	0.46	*
SB	LT	97	1422	0.07	0.56	792	0.12	
SB	TH	386	1497	0.26	0.56	834	0.46	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.42 TOTAL V/C= 0.46

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH	0.41		0.34	80.0	15.26	513	0.00	0.85	12.97	B	3.1	10
EB	RT	0.25		0.34	80.0	14.36	370	0.00	0.85	12.21	B	1.4	5
WB	LT	0.46	*	0.34	80.0	15.60	329	0.00	0.85	13.26	B	2.2	8
SB	LT	0.12		0.56	80.0	6.40	792	0.00	1.00	6.40	B	1.0	4
SB	TH	0.46	*	0.56	80.0	8.03	834	0.00	0.85	6.82	B	3.8	12

DIR	STREET	DELAY	LOS
EB	SUMMER ST	12.74	B
WB	SUMMER ST	13.26	B
SB	OTIS ST	6.74	B

INTERSECTION DELAY = 9.73 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

SURFACE ARTERY/LINCOLN ST/ESSEX ST
1995 BUILD AM PEAK WITH REVISED NETWORK]
Date 04-10-1989 Time: 14.39:45

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=21AM GEOMETRICS=21AM SIGNAL=21AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

DIR	STREET	VOLUMES LT	TH	RT	TOTAL	# OF LANES LT	TH	RT	LANE WIDTH LT	TH	RT	CROSS WALK
EB	ESSEX ST	131	663	82	876	0	3	0	0.0	12.0	0.0	52
WB	LINCOLN ST	346	1372	33	1751	0	3	0	0.0	12.0	0.0	30
NB	SURFACE ARTERY	128	512	19	659	0	3	0	0.0	11.0	0.0	56
SB	SURFACE ARTERY	74	733	277	1084	0	3	0	0.0	12.0	0.0	66

TOTAL VOLUME = 4370

TRAFFIC & ROADWAY CONDITIONS

DIR	GRADE	%HV	ADJ PARK Y/N	MOVES	BUSES	PHF	PEDESTRIANS CROSS	BUT	MIN TIME	ARR TYPE
EB	0.0%	2.0%	N	0	10	.870	30	Y	16.0	3
WB	0.0%	2.0%	N	10	10	.870	200	Y	16.0	3
NB	0.0%	2.0%	N	0	20	.870	90	Y	15.5	3
SB	0.0%	2.0%	N	0	25	.870	380	Y	15.5	3

PHASINGS

	EASTBOUND l	t	r	p	WESTBOUND l	t	r	p	NORTHBOUND l	t	r	p	SOUTHBOUND l	t	r	p	GREEN	Y+R	PRE/ACT
1	*	*	*									*				*	22.9	4	A
2				*				*	*	*	*		*	*	*		40.3	4	A
3					*	*	*					*				*	44.7	4	A

CYCLE= 120.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	131	663	82	.870	151	762	94
WB	346	1372	33	.870	398	1577	38
NB	128	512	19	.870	147	589	22
SB	74	733	277	.870	85	843	318

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT-TH-RT	1007	3	1.10	1108	0.15	0.09
WB	LT-TH-RT	2013	3	1.10	2214	0.20	0.02
NB	LT-TH-RT	757	3	1.10	833	0.19	0.03
SB	LT-TH-RT	1246	3	1.10	1371	0.07	0.26

SURFACE ARTERY/LINCOLN ST/ESSEX ST
1995 BUILD AM PEAK WITH REVISED NETWORK]
date: 04-10-1989 time. 14 39:46

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH-RT	1800	3	1.000	0.990	1.000	1.000	0.986	0.900	0.982	0.951	4429
WB	LT-TH-RT	1800	3	1.000	0.990	1.000	1.000	0.986	0.900	0.994	0.962	4536
NB	LT-TH-RT	1800	3	0.967	0.990	1.000	1.000	0.972	0.900	0.993	0.709	3182
SB	LT-TH-RT	1800	3	1.000	0.990	1.000	1.000	0.965	0.900	0.958	0.700	3114

SUPPLEMENTAL WORKSHEET FOR
LEFT-TURN ADJUSTMENT FACTOR FLT
INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	No	Vo	Plto	LGo
NB	120	40	3	757	757	147	0.19	3	1246	0.07	0
SB	120	40	3	1246	1246	85	0.07	3	757	0.19	0

CALCULATIONS

DIR	Scp	Yo	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
NB	4809	0.259	12.487	0.096	1.000	27.858	0.000	0.000	11.687	0.126	0.709
SB	1756	0.431	0.000	0.402	1.000	40.345	0.000	0.000	2.801	0.099	0.700

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH-RT	1108	4429	0.25	0.19	846	1.31	*
WB	LT-TH-RT	2214	4536	0.49	0.37	1691	1.31	*
NB	LT-TH-RT	833	3182	0.26	0.34	1070	0.78	
SB	LT-TH-RT	1371	3114	0.44	0.34	1047	1.31	*

C·CLE=120.0 LOST=12.0 SUM V/S CRIT= 1.18 TOTAL V/C= 1.31

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CN	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH-RT	1.31	*	0.19	120.0	39.80	846	115.00	0.85	131.57	F	61.4	185
WB	LT-TH-RT	1.31	*	0.37	120.0	35.04	1691	111.15	0.85	124.27	F	111.4	335
NB	LT-TH-RT	0.78		0.34	120.0	27.22	1070	3.14	0.85	25.80	D	16.8	51
SB	LT-TH-RT	1.31	*	0.34	120.0	35.89	1047	113.53	0.85	127.01	F	70.9	213

DIR	STREET	DELAY	LOS
EB	ESSEX ST	131.57	F
WB	LINCOLN ST	124.27	F
NB	SURFACE ARTERY	25.80	D
SB	SURFACE ARTERY	127.01	F

INTERSECTION DELAY =111.56 INTERSECTION LOS=F

THE EXISTING TIMING IS OPTIMAL

SURFACE ARTERY/LINCOLN ST/ESSEX ST
1995 BUILD PM PEAK WITH REVISED NETWORK
Date: 04-10-1989 Time: 14:42:36

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=21PM GEOMETRICS=21PM SIGNAL=21PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	ESSEX ST	153	993	265	1411	0	3	0	0.0	12.0	0.0	52
WB	LINCOLN ST	226	525	12	763	0	2	0	0.0	12.0	0.0	30
NB	SURFACE ARTERY	67	713	13	793	0	3	0	0.0	11.0	0.0	56
SB	SURFACE ARTERY	36	1330	163	1529	0	3	0	0.0	12.0	0.0	66

TOTAL VOLUME = 4496

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.940	15	Y	16.0	3
WB	0.0%	2.0%	Y	10	10	.940	180	Y	16.0	3
NB	0.0%	2.0%	N	0	20	.940	100	Y	15.5	3
SB	0.0%	2.0%	N	0	25	.940	310	Y	15.5	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*	*	*									*				*	32.4	4	A
2				*				*	*	*	*		*	*	*		48.5	4	A
3					*	*	*					*				*	27.1	4	A

CYCLE= 120.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	153	993	265	.940	163	1056	282
WB	226	525	12	.940	240	559	13
NB	67	713	13	.940	71	759	14
SB	36	1330	163	.940	38	1415	173

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
EB	LT-TH-RT	1501	3	1.10	1651	0.11	0.19
WB	LT-TH-RT	812	2	1.05	852	0.30	0.02
NB	LT-TH-RT	844	3	1.10	928	0.08	0.02
SB	LT-TH-RT	1627	3	1.10	1789	0.02	0.11

SURFACE ARTERY/LINCOLN ST/ESSEX ST
1995 BUILD PM PEAK WITH REVISED NETWORK
date: 04-10-1989 time: 14:42.37

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH-RT	1800	3	1.000	0.990	1.000	1.000	0.986	0.900	0.963	0.968	4421
WB	LT-TH-RT	1800	2	1.000	0.990	1.000	0.925	0.979	0.900	0.995	0.941	2721
NB	LT-TH-RT	1800	3	0.967	0.990	1.000	1.000	0.972	0.900	0.996	0.694	3127
SB	LT-TH-RT	1800	3	1.000	0.990	1.000	1.000	0.965	0.900	0.983	0.700	3196

SUPPLEMENTAL WORKSHEET FOR
LEFT-TURN ADJUSTMENT FACTOR FLT
INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	No	Vo	Plto	LGo
NB	120	49	3	844	944	71	0.08	3	1399	0.02	0
SB	120	49	3	1627	1399	38	0.02	3	844	0.08	0

CALCULATIONS

DIR	Sop	Yo	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
NB	5130	0.273	21.705	0.001	1.000	26.806	0.000	0.000	1800.000	0.083	0.694
SB	35	1.000	0.000	0.348	0.531	48.511	0.469	1.765	3.235	0.100	0.700

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH-RT	1651	4421	0.37	0.27	1192	1.39	*
WB	LT-TH-RT	852	2721	0.31	0.23	615	1.39	*
NB	LT-TH-RT	928	3127	0.30	0.40	1264	0.73	
SB	LT-TH-RT	1789	3196	0.56	0.40	1292	1.38	*

CYCLE=120.0 LOST=12.0 SUM V/S CRIT= 1.25 TOTAL V/C= 1.38

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH-RT	1.39	*	0.27	120.0	38.82	1192	138.38	0.85	150.63	F	99.9	300
WB	LT-TH-RT	1.39	*	0.23	120.0	39.76	615	142.89	0.85	155.25	F	56.0	169
NB	LT-TH-RT	0.73		0.40	120.0	23.01	1264	1.89	0.85	21.16	C	16.8	51
SB	LT-TH-RT	1.38	*	0.40	120.0	36.77	1292	137.89	0.85	148.46	F	103.4	311

DIR	STREET	DELAY	LOS
EB	ESSEX ST	150.63	F
WB	LINCOLN ST	155.25	F
NB	SURFACE ARTERY	21.16	C
SB	SURFACE ARTERY	148.46	F

INTERSECTION DELAY =127.63 INTERSECTION LOS=F

THE EXISTING TIMING IS OPTIMAL

INCH PROGRAM VERSION DATE 4-29-1988
985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
ATE:04-11-1989 TIME:06:19:51
ARRISON/BEACH 1995 BUILD PM PEAK REVISED NETWORK

AST DATASETS LOADED OR SAVED
OLUME=12AM GEOMETRICS=12AM

```
EY:   D
      :
    A- -B
      :
      C
```

ENERAL CHARACTERISTICS
OPULATION GREATER THAN 250,000: YES
ONTROLS: FROM C: STOP
FROM D: YIELD
REVAILING SPEED: 30 MPH
AIN STREET # OF LANES 4 LANES
AIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE. NO
AIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE. NO

INOR STREET LANES

PPROACH C. WB BEACH
XCLUSIVE LEFT TURN LANES: NO
XCLUSIVE RIGHT TURN LANES: NO
ARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
IGHT TURN ACCELERATION LANE ON MAJOR: NO

PPROACH D: EB BEACH
XCLUSIVE LEFT TURN LANES: NO
XCLUSIVE RIGHT TURN LANES: NO
ARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
IGHT TURN ACCELERATION LANE ON MAJOR: NO

IGHT DISTANCE RESTRICTIONS (in seconds)

PPROACH	A: NB HARRISON	B: SB HARRISON	C: WB BEACH	D: EB BEACH
EFTS	0.00	0.00	0.00	0.00
HRUS	0.00	0.00	0.00	0.00
IGHTS	0.00	0.00	0.00	0.00

PPROACH	A: NB HARRISON			B: SB HARRISON			C: WB BEACH			D: EB BEACH		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
OLUME	0	0	1	0	225	147	72	36	0	0	0	1
HF	0.88			0.88			0.88			0.88		
DJ VOLUME	0	0	1	0	256	167	82	41	0	0	0	1
ERCENT GRADE	0.00			0.00			0.00					
ASS CAR/HR	0			0			90	45	0	0	0	1

TEP 1 RIGHT TURNS FROM	C:WB BEACH	D:EB BEACH
ONFLICTING FLOWS	1	211
RITICAL GAPS	5.0	4.5
APACITY	1199	1084
APACITY USED	0%	0%
MPEDANCE FACTOR	1.00	1.00
CTUAL CAPACITY	1199	1084

1985 HCM - CHAPTER 10 UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:04-11-1989 TIME:06.19.51
HARRISON BEACH 1995 BUILD PM PEAK REVISED NETWORK

STEP 2 LEFT TURNS FROM	B:SB HARRISON	A:NB HARRISON
CONFLICTING FLOWS	1	423
CRITICAL GAPS	5.5	5.5
CAPACITY	1106	686
CAPACITY USED	0%	0%
IMPEDANCE FACTOR	1.00	1.00
ACTUAL CAPACITY	1106	686

STEP 3 THRU MOVES FROM	C:WB BEACH	D:EB BEACH
CONFLICTING FLOWS	423	340
CRITICAL GAPS	6.5	6.0
CAPACITY	543	677
CAPACITY USED	8%	0%
IMPEDANCE FACTOR	0.95	1.00
ACTUAL CAPACITY	543	677

STEP 4 LEFT TURNS FROM	C:WB BEACH	D:EB BEACH
CONFLICTING FLOWS	424	381
CRITICAL GAPS	7.0	6.5
CAPACITY	486	576
ACTUAL CAPACITY	486	548

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
ALL MOVES FROM C:	135	503	368	B	9.78	0.37
ALL MOVES FROM D:	1	1084	1082	A	3.33	0.00

INCH PROGRAM VERSION DATE 4-29-1988
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ATE 04-11-1989 TIME 06:21:48
EACH HARRISON 1995 BUILD PM PEAK REVISED NETWORK

AST DATASETS LOADED OR SAVED
OLUME=12PM GEOMETRICS=12PM

```
EY    D
      :
   A- -B
      :
      C
```

ENERAL CHARACTERISTICS
OPULATION GREATER THAN 250,000: YES
ONTROLS: FROM C: STOP
FROM D: YIELD
REVAILING SPEED. 30 MPH
AIN STREET # OF LANES: 4 LANES
AIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE. NO
AIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

NOR STREET LANES

PROACH C. WB BEACH
CLUSIVE LEFT TURN LANES NO
CLUSIVE RIGHT TURN LANES: NO
ARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE. NO
GHT TURN ACCELERATION LANE ON MAJOR: NO

PROACH D. EB BEACH
CLUSIVE LEFT TURN LANES NO
CLUSIVE RIGHT TURN LANES: NO
ARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
IGHT TURN ACCELERATION LANE ON MAJOR: NO

IGHT DISTANCE RESTRICTIONS (in seconds)

PPROACH	A: NB HARRISON	B SB HARRISON	C: WB BEACH	D: EB BEACH
EFTS	0.00	0.00	0.00	0.00
HRUS	0.00	0.00	0.00	0.00
IGHTS	0.00	0.00	0.00	0.00

PPROACH	A NB HARRISON			B: SB HARRISON			C: WB BEACH			D: EB BEACH		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
OLUME	0	0	1	0	537	106	154	77	0	0	0	1
HF	0.92			0.92			0.92			0.92		
OJ VOLUME	0	0	1	0	584	115	167	84	0	0	0	1
ERCENT GRADE	0.00			0.00			0.00					
ASS CAR/HR	0			0			184	92	0	0	0	1

EF 1 RIGHT TURNS FROM	C.WB BEACH	D:EB BEACH
ONFLICTING FLOWS	1	349
RITICAL GAPS	5.0	4.5
APACITY	1199	952
APACITY USED	0%	0%
IMPEDANCE FACTOR	1.00	1.00
CTUAL CAPACITY	1199	952

1985 HCM - CHAPTER 10 UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:04-11-1989 TIME:06:21 48
BEACH/HARRISON 1995 BUILD PM PEAK REVISED NETWORK

STEP 2 LEFT TURNS FROM	B:SB HARRISON	A:NE HARRISON
CONFLICTING FLOWS	1	699
CRITICAL GAPS	5.5	5.5
CAPACITY	1106	486
CAPACITY USED	0%	0%
IMPEDANCE FACTOR	1.00	1.00
ACTUAL CAPACITY	1106	488

STEP 3 THRU MOVES FROM	C:WB BEACH	D:EB BEACH
CONFLICTING FLOWS	699	642
CRITICAL GAPS	6.5	6.0
CAPACITY	364	455
CAPACITY USED	25%	0%
IMPEDANCE FACTOR	0.81	1.00
ACTUAL CAPACITY	364	455

STEP 4 LEFT TURNS FROM	C:WB BEACH	D:EB BEACH
CONFLICTING FLOWS	701	726
CRITICAL GAPS	7.0	6.5
CAPACITY	315	349
ACTUAL CAPACITY	315	284

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
ALL MOVES FROM C:	276	330	54	E	66.97	5.14
ALL MOVES FROM D:	1	952	951	A	3.79	0.00

INCH PROGRAM VERSION DATE 4-29-1988
985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
ATE:04-11-1989 TIME:06.23.56
SSEX/HARRISON 1995 BUILD AM PEAK WITH REVISED NETWORK

AST DATASETS LOADED OR SAVED
OLUME=13AM GEOMETRICS=13AM

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EY:   D
      |
    A- -B
      |
      C
```

ENERAL CHARACTERISTICS
OPULATION GREATER THAN 250,000: YES
ONTROLS FROM C: YIELD
FROM D: STOP
REVAILING SPEED: 30 MPH
AIN STREET # OF LANES: 2 LANES
AIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: YES
AIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

INOR STREET LANES

PPROACH: C NB HARRISON
XCLUSIVE LEFT TURN LANES: NO
XCLUSIVE RIGHT TURN LANES: NO
ARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
IGHT TURN ACCELERATION LANE ON MAJOR: NO

PPROACH D: SB HARRISON
XCLUSIVE LEFT TURN LANES: YES
XCLUSIVE RIGHT TURN LANES: NO
ARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
IGHT TURN ACCELERATION LANE ON MAJOR: NO

IGHT DISTANCE RESTRICTIONS (in seconds)

PPROACH	A: EB ESSEX	B: WB ESSEX	C NB HARRISON	D: SB HARRISON
EFTS	0.00	0.00	0.00	0.00
HRUS	0.00	0.00	0.00	0.00
IGHTS	0.00	0.00	0.00	0.00

PPROACH	A EB ESSEX			B: WB ESSEX			C: NB HARRISON			D: SB HARRISON		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
OLUME	768	648	302	0	0	1	0	0	1	68	70	0
HF	0.91			0.91			0.91			0.91		
OJ VOLUME	844	712	332	0	0	1	0	0	1	75	77	0
ERCENT GRADE	0.00			0.00			0.00					
ASS CAR/HR	928			0			0	0	1	82	85	0

TEP 1 RIGHT TURNS FROM	C:NB HARRISON	D:SB HARRISON
ONFLICTING FLOWS	356	1
RITICAL GAPS	4.5	5.0
APACITY	946	1199
APACITY USED	0%	0%
MPEDANCE FACTOR	1.00	1.00
CTUAL CAPACITY	946	1199

1985 HCM - CHAPTER 10 UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
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ESSEX/HARRISON 1995 BUILD AM PEAK WITH REVISED NETWORK

STEP 2 LEFT TURNS FROM	B WB ESSEX	A EB ESSEX
CONFLICTING FLOWS	712	1
CRITICAL GAPS	5.0	5.0
CAPACITY	562	1199
CAPACITY USED	0%	77%
IMPEDANCE FACTOR	1.00	0.28
ACTUAL CAPACITY	562	1199

STEP 3 THRU MOVES FROM	C:NB HARRISON	D:SB HARRISON
CONFLICTING FLOWS	1557	1557
CRITICAL GAPS	5.5	6.0
CAPACITY	145	113
CAPACITY USED	0%	75%
IMPEDANCE FACTOR	1.00	0.31
ACTUAL CAPACITY	41	32

STEP 4 LEFT TURNS FROM	C:NB HARRISON	D:SB HARRISON
CONFLICTING FLOWS	1634	1558
CRITICAL GAPS	6.0	6.5
CAPACITY	99	88
ACTUAL CAPACITY	9	25

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM A	928	1199	270	C	13.31	3.43
ALL MOVES FROM C:	1	946	945	A	3.81	0.00
LT FROM D	82	25	-57	F	INFINITE	INFINITE
SHARED TH/RT FROM D.	85	32	-53	F	INFINITE	INFINITE

NCH PROGRAM VERSION DATE 4-29-1988
35 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
TE:04-11-1989 TIME:06:25:21
SEX/HARRISON 1995 BUILD PM PEAK WITH REVISED NETWORK

ST DATASETS LOADED OR SAVED
LUME=13PM GEOMETRICS=13PM

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Y:   D
     |
  A- -B
     |
     C
```

NERAL CHARACTERISTICS
PULATION GREATER THAN 250,000 YES
NTROLS: FROM C: YIELD
FROM D: STOP
EVAILING SPEED 30 MPH
IN STREET # OF LANES: 2 LANES
IN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: YES
N STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

NOR STREET LANES

PROACH C NB HARRISON
CLUSIVE LEFT TURN LANES NO
CLUSIVE RIGHT TURN LANES: NO
RGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
GHT TURN ACCELERATION LANE ON MAJOR NO

PROACH D. SB HARRISON
CLUSIVE LEFT TURN LANES YES
CLUSIVE RIGHT TURN LANES: NO
RGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
GHT TURN ACCELERATION LANE ON MAJOR. NO

GHT DISTANCE RESTRICTIONS (in seconds)

PROACH	A: EB ESSEX	B: WB ESSEX	C: NB HARRISON	D: SB HARRISON
FTS	0.00	0.00	0.00	0.00
RUS	0.00	0.00	0.00	0.00
GHTS	0.00	0.00	0.00	0.00

PROACH	A EB ESSEX			B: WB ESSEX			C: NB HARRISON			D: SB HARRISON		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
LUME	408	1088	373	0	0	1	0	0	1	241	270	0
	0.91			0.91			0.91			0.91		
J VOLUME	448	1196	410	0	0	1	0	0	1	265	297	0
RCENT GRADE	0.00			0.00			0.00					
BS CAR/HR	493			0			0	0	1	291	326	0

EP 1 RIGHT TURNS FROM	C:NB HARRISON	D:SB HARRISON
NFLICTING FLOWS	598	1
ITICAL GAPS	4.5	5.0
PACITY	745	1199
PACITY USED	0%	0%
PEDANCE FACTOR	1.00	1.00
TUAL CAPACITY	745	1199

1985 HCM - CHAPTER 10 UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:04-11-1989 TIME:06:25:21
ESSEX/HARRISON 1995 BUILD PM PEAK WITH REVISED NETWORK

STEP 2 LEFT TURNS FROM	B:WB ESSEX	A:EB ESSEX
CONFLICTING FLOWS	1196	1
CRITICAL GAPS	5.0	5.0
CAPACITY	309	1199
CAPACITY USED	0%	41%
IMPEDANCE FACTOR	1.00	0.66
ACTUAL CAPACITY	309	1199

STEP 3 THRU MOVES FROM	C:NB HARRISON	D:SB HARRISON
CONFLICTING FLOWS	1645	1645
CRITICAL GAPS	5.5	6.0
CAPACITY	126	97
CAPACITY USED	0%	336%
IMPEDANCE FACTOR	1.00	0.00
ACTUAL CAPACITY	64	64

STEP 4 LEFT TURNS FROM	C:NB HARRISON	D:SB HARRISON
CONFLICTING FLOWS	1942	1646
CRITICAL GAPS	6.0	6.5
CAPACITY	56	75
ACTUAL CAPACITY	0	50

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM A	493	1199	706	A	5.10	0.70
ALL MOVES FROM C:	1	0	-1	F	INFINITE	INFINITE
LT FROM D:	291	50	-241	F	INFINITE	INFINITE
SHARED THRU FROM D:	326	64	-262	F	INFINITE	INFINITE

ICH PROGRAM VERSION DATE 4-29-1988
5 HCM - CHAPTER 10 UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
TE:04-11-1995 TIME:06:26:52
E:HARRISON 1995 BUILD SAT PEAK WITH REVISED NETWORK

T DATASETS LOADED OR SAVED
UME=13SAT GEOMETRICS=13SAT
: D
.
A- -B
:
C
ERAL CHARACTERISTICS
ULATION GREATER THAN 250,000: YES
TROLS: FROM C: YIELD
FROM D: STOP
VAILING SPEED 30 MPH
N STREET # OF LANES 2 LANES
STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: YES
N STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

OF STREET LANES

ROACH C: NB HARRISON
LUSIVE LEFT TURN LANES: NO
LUSIVE RIGHT TURN LANES: NO
GE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
HT TURN ACCELERATION LANE ON MAJOR: NO

ROACH D: SB HARRISON
LUSIVE LEFT TURN LANES: YES
LUSIVE RIGHT TURN LANES: NO
GE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
HT TURN ACCELERATION LANE ON MAJOR: NO

HT DISTANCE RESTRICTIONS (in seconds)

ROACH	A EB ESSEX	B. WB ESSEX	C: NB HARRISON	D. SB HARRISON
TS	0.00	0.00	0.00	0.00
UE	0.00	0.00	0.00	0.00
HTE	0.00	0.00	0.00	0.00

ROACH	A EB ESSEX			B: WB ESSEX			C. NB HARRISON			D: SB HARRISON		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
UME	506	823	385	0	0	1	0	0	1	186	128	0
	0.87			0.91			0.87			0.87		
VOLUME	582	946	443	0	0	1	0	0	1	214	147	0
RCENT GRADE	0.00			0.00			0.00					
S CAR/HR	640			0			0	0	1	235	162	0

P 1 RIGHT TURNS FROM	C:NB HARRISON	D.SB HARRISON
FLICTING FLOWS	473	1
TICAL GAPS	4.5	5.0
ACITY	844	1199
ACITY USED	0%	0%
EDANCE FACTOR	1.00	1.00
UAL CAPACITY	844	1199

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DATE:04-11-1989 TIME:06.26 52
ESSEX/HARRISON 1995 BUILD SAT PEAK WITH REVISED NETWORK

STEP 2 LEFT TURNS FROM	B:WB ESSEX	A:EB ESSEX
CONFLICTING FLOWS	946	1
CRITICAL GAPS	5.0	5.0
CAPACITY	424	1199
CAPACITY USED	0%	53%
IMPEDANCE FACTOR	1.00	0.54
ACTUAL CAPACITY	424	1199

STEP 3 THRU MOVES FROM	C:NB HARRISON	D:SB HARRISON
CONFLICTING FLOWS	1529	1528
CRITICAL GAPS	5.5	6.0
CAPACITY	151	119
CAPACITY USED	0%	136%
IMPEDANCE FACTOR	1.00	0.00
ACTUAL CAPACITY	82	64

STEP 4 LEFT TURNS FROM	C:NB HARRISON	D:SB HARRISON
CONFLICTING FLOWS	1676	1529
CRITICAL GAPS	6.0	6.5
CAPACITY	92	93
ACTUAL CAPACITY	0	50

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM A	640	1199	559	A	6.44	1.14
ALL MOVES FROM C	1	0	-1	F	INFINITE	INFINITE
LT FROM C	235	50	-185	F	INFINITE	INFINITE
SHARED TH/RT FROM D:	162	64	-98	F	INFINITE	INFINITE

ICH PROGRAM VERSION DATE 4-29-1986
35 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
TE:04-11-1989 TIME.06:33:27
RRISON/AVE DE LAF/GARAGE 1995 BUILD AM PEAK REVISED NETWORK

ST DATASETS LOADED OR SAVED
LUME=14AM GEOMETRICS=14AM

D

A- -B

C

ERAL CHARACTERISTICS
ULATION GREATER THAN 250,000: YES
NTROLS: FROM C: YIELD
FROM D: STOP
FROM D RT LANE: STOP
VAILING SPEED 30 MPH
N STREET # OF LANES 4 LANES
N STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE NO
N STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

OR STREET LANES

ROACH: C NB HARRISON
LUSIVE LEFT TURN LANES NO
LUSIVE RIGHT TURN LANES: NO
GE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
HT TURN ACCELERATION LANE ON MAJOR: NO

ROACH D GARAGE
LUSIVE LEFT TURN LANES YES
LUSIVE RIGHT TURN LANES YES
GE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
T TURN ACCELERATION LANE ON MAJOR: NO

HT DISTANCE RESTRICTIONS (in seconds)

ROACH	A AVE DE LAFA	B: AVE DE LAFA	C: NB HARRISON	D: GARAGE
TS	0.00	0.00	0.00	0.00
US	0.00	0.00	0.00	0.00
HTS	0.00	0.00	0.00	0.00

ROACH	A AVE DE LAFA			B. AVE DE LAFA			C: NB HARRISON			D: GARAGE		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
UME	0	0	1	432	0	479	0	0	1	0	80	0
	0.85			0.85			0.87			0.85		
VOLUME	0	0	1	508	0	564	0	0	1	0	94	0
CENT GRADE	0.00			0.00			0.00					
CENT CYCLES	0.00			0.00			0.00			0.00		
SENGER CARS	0.00			0.00			0.00			%100.00		
CENT LT TRU	0.00			0.00			0.00			0.00		
CENT HV TRU	0.00			0.00			0.00			0.00		
S CAP/HR	0			559			0	0	1	0	94	0

P 1 RIGHT TURNS FROM	C.NB HARRISON	D:GARAGE
FLICTING FLOWS	1	292
TICAL GAPS	4.5	5.0
ACITY	1309	903
ACITY USED	0%	0%
EDANCE FACTOR	1.00	1.00
UAL CAPACITY	1309	903

1985 HCM - CHAPTER 10 UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE 04-11-1989 TIME 06:33:27
HARRISON AVE DE LAF/GARAGE 1995 BUILD AM PEAK REVISED NETWORK

STEP 2 LEFT TURNS FROM	E:AVE DE LAFA	A.AVE DE LAFA
CONFLICTING FLOWS	1	564
CRITICAL GAPS	5.5	5.5
CAPACITY	1106	578
CAPACITY USED	51%	0%
IMPEDANCE FACTOR	0.57	1.00
ACTUAL CAPACITY	1106	578

STEP 3 THRU MOVES FROM	C:NB HARRISON	D:GARAGE
CONFLICTING FLOWS	1072	791
CRITICAL GAPS	6.0	6.5
CAPACITY	245	317
CAPACITY USED	0%	30%
IMPEDANCE FACTOR	1.00	0.77
ACTUAL CAPACITY	140	181

STEP 4 LEFT TURNS FROM	C:NB HARRISON	D:GARAGE
CONFLICTING FLOWS	1166	792
CRITICAL GAPS	6.5	7.0
CAPACITY	174	272
ACTUAL CAPACITY	77	155

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM E	559	1106	547	A	6.58	1.02
ALL MOVES FROM C	1	1309	1307	A	2.75	0.00
TH FROM D:	94	181	87	E	41.61	1.09

INCH PROGRAM VERSION DATE 4-29-1988
985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
ATE:04-11-1989 TIME:06:35.22
ARRISON/AVE DE LAF/GARAGE 1995 BUILD PM PEAK REVISED NETWORK

AST DATASETS LOADED OR SAVED
OLUME=14PM GEOMETRICS=14PM

```
Y    D
     |
   A- -B
     |
     C
```

NERAL CHARACTERISTICS
PULATION GREATER THAN 250,000. YES
NTROLS: FROM C YIELD
FROM D. STOP
FROM D RT LANE STOP
EVAILING SPEED: 30 MPH
IN STREET # OF LANES: 4 LANES
IN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE NO
IN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

NOR STREET LANES

PROACH C NB HARRISON
CLUSIVE LEFT TURN LANES. NO
CLUSIVE RIGHT TURN LANES: NO
RGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
GHT TURN ACCELERATION LANE ON MAJOR: NO

PROACH. D. GARAGE
CLUSIVE LEFT TURN LANES: YES
CLUSIVE RIGHT TURN LANES: YES
RGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
GHT TURN ACCELERATION LANE ON MAJOR: NO

GHT DISTANCE RESTRICTIONS (in seconds)

PROACH	A. AVE DE LAFA	B. AVE DE LAFA	C: NB HARRISON	D: GARAGE
FTS	0.00	0.00	0.00	0.00
RUS	0.00	0.00	0.00	0.00
GHTS	0.00	0.00	0.00	0.00

PROACH	A AVE DE LAFA			B AVE DE LAFA			C. NB HARRISON			D: GARAGE		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
LUME	0	0	1	533	0	213	0	0	1	0	500	0
F	0.95			0.95			0.87			0.85		
J VOLUME	0	0	1	561	0	224	0	0	1	0	588	0
RCENT GRADE	0.00			0.00			0.00					
RCENT CYCLES	0.00			0.00			0.00			0.00		
SSENGER CARS	0.00			0.00			0.00			%100.00		
RCENT LT TRU	0.00			0.00			0.00			0.00		
RCENT HV TRU	0.00			0.00			0.00			0.00		
SS CAR/HR	0			617			0	0	1	0	588	0

EF 1 RIGHT TURNS FROM	C:NB HARRISON	D:GARAGE
NFLICTING FLOWS	1	112
ITICAL GAPS	4.5	5.0
PACITY	1309	1074
PACITY USED	0%	0%
PEDANCE FACTOR	1.00	1.00
TUAL CAPACITY	1309	1074

1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:04-11-1989 TIME:06:35:22
HARRISON/AVE DE LAF/GARAGE 1995 BUILD PM PEAK REVISED NETWORK

STEP 2 LEFT TURNS FROM	B.AVE DE LAFA	A.AVE DE LAFA
CONFLICTING FLOWS	1	224
CRITICAL GAPS	5.5	5.5
CAPACITY	1106	864
CAPACITY USED	56%	0%
IMPEDANCE FACTOR	0.52	1.00
ACTUAL CAPACITY	1106	864

STEP 3 THRU MOVES FROM	C:NB HARRISON	D:GARAGE
CONFLICTING FLOWS	786	674
CRITICAL GAPS	6.0	6.5
CAPACITY	373	378
CAPACITY USED	0%	156%
IMPEDANCE FACTOR	1.00	0.00
ACTUAL CAPACITY	192	195

STEP 4 LEFT TURNS FROM	C:NB HARRISON	D:GARAGE
CONFLICTING FLOWS	1374	675
CRITICAL GAPS	6.5	7.0
CAPACITY	123	328
ACTUAL CAPACITY	0	170

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM B:	617	1106	489	A	7.36	1.26
ALL MOVES FROM C:	1	0	-1	F	INFINITE	INFINITE
TH FROM D:	588	195	-393	F	INFINITE	INFINITE

ICH PROGRAM VERSION DATE 4-29-1988
'85 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
TE:04-11-1989 TIME:06:37:06
RRISON/AVE DE LAF/GARAGE 1995 BUILD SAT PEAK EXISTING NETWORK

ST DATASETS LOADED OR SAVED
LUME=14SAT GEOMETRICS=14SAT

```
V:   D
     |
   A- -B
     |
     C
```

IERAL CHARACTERISTICS
PULATION GREATER THAN 250,000: YES
NTROLS: FROM C: YIELD
FROM D: STOP
FROM D RT LANE: STOP
AILING SPEED: 30 MPH
IN STREET # OF LANES: 4 LANES
IN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: NO
IN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

OR STREET LANES

ROACH: C NB HARRISON
LUSIVE LEFT TURN LANES: NO
LUSIVE RIGHT TURN LANES: NO
GE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
HT TURN ACCELERATION LANE ON MAJOR NO

ROACH D GARAGE
LUSIVE LEFT TURN LANES: YES
LUSIVE RIGHT TURN LANES: YES
GE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
HT TURN ACCELERATION LANE ON MAJOR: NO

HT DISTANCE RESTRICTIONS (in seconds)

ROACH	A AVE DE LAFA	B: AVE DE LAFA	C: NB HARRISON	D: GARAGE
TS	0.00	0.00	0.00	0.00
US	0.00	0.00	0.00	0.00
HTS	0.00	0.00	0.00	0.00

ROACH	A AVE DE LAFA			B: AVE DE LAFA			C: NB HARRISON			D: GARAGE		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
UME	0	0	1	407	0	252	0	0	1	0	240	0
P	0.87			0.87			0.87			0.87		
A VOLUME	0	0	1	468	0	290	0	0	1	0	276	0
CENT GRADE	0.00			0.00			0.00					
CENT CYCLES	0.00			0.00			0.00			0.00		
SENGER CARS	0.00			0.00			0.00			%100.00		
CENT LT TRU	0.00			0.00			0.00			0.00		
CENT HV TRU	0.00			0.00			0.00			0.00		
S CAR/HR	0			515			0	0	1	0	276	0

P 1 RIGHT TURNS FROM	C:NB HARRISON	D:GARAGE
FLICTING FLOWS	1	145
TICAL GAPS	4.5	5.0
ACITY	1308	1040
ACITY USED	0%	0%
EDANCE FACTOR	1.00	1.00
UAL CAPACITY	1308	1040

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HARRISON/AVE DE LAF GARAGE 1995 BUILD SAT PEAK EXISTING NETWORK

STEP 2 LEFT TURNS FROM	B:AVE DE LAFA	A.AVE DE LAFA
CONFLICTING FLOWS	1	290
CRITICAL GAPS	5.5	5.5
CAPACITY	1106	802
CAPACITY USED	47%	0%
IMPEDANCE FACTOR	0.61	1.00
ACTUAL CAPACITY	1106	802

STEP 3 THRU MOVES FROM	C:NB HARRISON	D:GARAGE
CONFLICTING FLOWS	758	614
CRITICAL GAPS	6.0	6.5
CAPACITY	387	413
CAPACITY USED	0%	67%
IMPEDANCE FACTOR	1.00	0.40
ACTUAL CAPACITY	237	252

STEP 4 LEFT TURNS FROM	C.NB HARRISON	D:GARAGE
CONFLICTING FLOWS	1034	615
CRITICAL GAPS	6.5	7.0
CAPACITY	217	362
ACTUAL CAPACITY	53	221

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM B.	515	1106	592	A	6.08	0.87
ALL MOVES FROM C:	1	1308	1307	A	2.75	0.00
TH FROM D.	276	252	-23	F	INFINITE	INFINITE

INCH PROGRAM VERSION DATE 4-29-1988
985 HCM - CHAPTER 10. UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
ATE:04-11-1989 TIME.06.38 44
DFORD/CHAUNCY.GARAGE 1995 BUILD AM PEAK REVISED NETWORK

AST DATASETS LOADED OR SAVED
OLUME=16AM GEOMETRICS=16AM

```
Y.   D
     |
  A- -B
     |
     C
```

NERAL CHARACTERISTICS
PULATION GREATER THAN 250,000: YES
NTROLS: FROM C. STOP
FROM D. STOP
EVAILING SPEED: 30 MPH
IN STREET # OF LANES. 2 LANES
IN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE. YES
IN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE. NO

NOR STREET LANES

PROACH C: BEDFORD ST
CLUSIVE LEFT TURN LANES: NO
CLUSIVE RIGHT TURN LANES: NO
RGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
GHT TURN ACCELERATION LANE ON MAJOR: NO

PROACH: D: GARAGE
CLUSIVE LEFT TURN LANES: NO
CLUSIVE RIGHT TURN LANES NO
RGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
GHT TURN ACCELERATION LANE ON MAJOR: NO

GHT DISTANCE RESTRICTIONS (in seconds)

PROACH	A: NB CHAUNCY	B: SB CHAUNCY	C: BEDFORD ST	D: GARAGE
FTS	0.00	0.00	0.00	0.00
RUS	0.00	0.00	0.00	0.00
GHTS	0.00	0.00	0.00	0.00

PROACH	A NB CHAUNCY			B. SB CHAUNCY			C: BEDFORD ST			D: GARAGE		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
LUME	164	309	132	0	1	0	183	317	98	39	47	7
F	0.92			0.92			0.92			0.92		
J VOLUME	178	336	143	0	1	0	199	345	107	42	51	8
RCENT GRADE	0.00			0.00			0.00					
RCENT CYCLES	0.00			0.00			0.00			0.00		
SSENGER CARS	0.00			0.00			0.00			%100.00		
RCENT LT TRU	0.00			0.00			0.00			0.00		
RCENT HV TRU	0.00			0.00			0.00			0.00		
SS CAR/HR	196			0			219	379	117	42	51	8

EP 1 RIGHT TURNS FROM	C:SEDFORD ST	D:GARAGE
NFLICTING FLOWS	336	1
ITICAL GAPS	5.0	5.0
PACITY	853	1199
PACITY USED	14%	1%
PEDANCE FACTOR	0.91	1.00

1985 HCM - CHAPTER 10 UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
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BEDFORD/CHAUNCY/GARAGE 1995 BUILD AM PEAK REVISED NETWORK

STEP 2 LEFT TURNS FROM	B:SB CHAUNCY	A:NB CHAUNCY
CONFLICTING FLOWS	336	1
CRITICAL GAPS	5.0	5.0
CAPACITY	853	1199
CAPACITY USED	0%	16%
IMPEDANCE FACTOR	1.00	0.89
ACTUAL CAPACITY	853	1199

STEP 3 THRU MOVES FROM	C:BEDFORD ST	D:GARAGE
CONFLICTING FLOWS	515	515
CRITICAL GAPS	6.0	6.0
CAPACITY	539	539
CAPACITY USED	70%	9%
IMPEDANCE FACTOR	0.36	0.94
ACTUAL CAPACITY	480	480

STEP 4 LEFT TURNS FROM	C:BEDFORD ST	D:GARAGE
CONFLICTING FLOWS	574	966
CRITICAL GAPS	6.5	6.5
CAPACITY	438	241
ACTUAL CAPACITY	366	71

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM A:	196	1199	1003	A	3.59	0.20
ALL MOVES FROM C	715	469	-246	F	INFINITE	INFINITE
ALL MOVES FROM D:	101	142	41	E	88.83	2.49

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10. UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE.04-11-1989 TIME.06:41.34
BEDFORD/CHAUNCY/GARAGE 1995 BUILD PM PEAK REVISED NETWORK

LAST DATASETS LOADED OR SAVED
VOLUME=16PM GEOMETRICS=16PM
KEY: D

A- -B
.
C

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS FROM C: STOP
FROM D STOP
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES. 2 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: YES
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH C. BEDFORD ST
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE. NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH D GARAGE
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: NB CHAUNCY	B: SB CHAUNCY	C: BEDFORD ST	D. GARAGE
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A NB CHAUNCY			B. SB CHAUNCY			C. BEDFORD ST			D: GARAGE		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	96	324	71	0	1	0	193	187	53	180	268	79
PHF	0.92			0.92			0.92			0.92		
ADJ VOLUME	104	352	77	0	1	0	210	203	58	196	291	86
PERCENT GRADE	0.00			0.00			0.00					
PERCENT CYCLES	0.00			0.00			0.00			0.00		
PASSENGER CARS	0.00			0.00			0.00			%100.00		
PERCENT LT TRU	0.00			0.00			0.00			0.00		
PERCENT HV TRU	0.00			0.00			0.00			0.00		
PASS CAR/HR	115			0			231	224	63	196	291	86

STEP 1 RIGHT TURNS FROM	C.BEDFORD ST	D:GARAGE
CONFLICTING FLOWS	352	1
CRITICAL GAPS	5.0	5.0
CAPACITY	839	1199
CAPACITY USED	8%	7%
IMPEDANCE FACTOR	0.96	0.96

1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:04-11-1989 TIME:06:41.34
BEDFORD/CHAUNCY/GARAGE 1995 BUILD PM PEAK REVISED NETWORK

STEP 2 LEFT TURNS FROM	B:SB CHAUNCY	A:NB CHAUNCY
CONFLICTING FLOWS	352	1
CRITICAL GAPS	5.0	5.0
CAPACITY	839	1199
CAPACITY USED	0%	10%
IMPEDANCE FACTOR	1.00	0.94
ACTUAL CAPACITY	839	1199

STEP 3 THRU MOVES FROM	C:BEDFORD ST	D.GARAGE
CONFLICTING FLOWS	458	458
CRITICAL GAPS	6.0	6.0
CAPACITY	582	582
CAPACITY USED	38%	50%
IMPEDANCE FACTOR	0.69	0.58
ACTUAL CAPACITY	548	548

STEP 4 LEFT TURNS FROM	C:BEDFORD ST	D:GARAGE
CONFLICTING FLOWS	835	718
CRITICAL GAPS	6.5	6.5
CAPACITY	296	353
ACTUAL CAPACITY	154	220

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM A	115	1199	1084	A	3.32	0.11
ALL MOVES FROM C:	518	261	-256	F	INFINITE	INFINITE
ALL MOVES FROM D.	573	384	-189	F	INFINITE	INFINITE

CINCH PROGRAM VERSION DATE 4-29-1989
1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE.04-11-1989 TIME:05.44:40
BEDFORD/CHAUNCY/GARAGE 1995 BUILD SAT PEAK REVISED NETWORK

LAST DATASETS LOADED OR SAVED
VOLUME=16SAT GEOMETRICS=16SAT
KEY. D
.
A- -S
.
C

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000. YES
CONTROLS. FROM C: STOP
FROM D. STOP
PREVAILING SPEED 30 MPH
MAIN STREET # OF LANES 2 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE YES
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH C: BEDFORD ST
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH D GARAGE
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A. NE CHAUNCY	B. SB CHAUNCY	C: BEDFORD ST	D: GARAGE
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A NE CHAUNCY			B SB CHAUNCY			C: BEDFORD ST			D: GARAGE		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	95	251	101	0	1	0	200	145	120	75	108	20
PHF	0.90			0.90			0.90			0.90		
ADJ VOLUME	109	279	112	0	1	0	222	161	133	83	120	22
PERCENT GRADE	0.00			0.00			0.00					
PERCENT CYCLES	0.00			0.00			0.00			0.00		
PASSENGER CARS	0.00			0.00			0.00			%100.00		
PERCENT LT TRU	0.00			0.00			0.00			0.00		
PERCENT HV TRU	0.00			0.00			0.00			0.00		
PASS CAR/HR	120			0			244	177	147	83	120	22

STEP 1 RIGHT TURNS FROM	C:BEDFORD ST	D:GARAGE
CONFLICTING FLOWS	279	1
CRITICAL GAPS	5.0	5.0
CAPACITY	906	1199
CAPACITY USED	16%	2%
IMPEDANCE FACTOR	0.89	0.99
ACTUAL CAPACITY	906	1199

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DATE:04-11-1989 TIME:06:44:40
BEDFORD/CHAUNCY/GARAGE 1995 BUILD SAT PEAK REVISED NETWORK

STEP 2 LEFT TURNS FROM	B:SB CHAUNCY	A:NB CHAUNCY
CONFLICTING FLOWS	279	1
CRITICAL GAPS	5.0	5.0
CAPACITY	906	1199
CAPACITY USED	0%	10%
IMPEDANCE FACTOR	1.00	0.94
ACTUAL CAPACITY	906	1199

STEP 3 THRU MOVES FROM	C:BEDFORD ST	D:GARAGE
CONFLICTING FLOWS	389	389
CRITICAL GAPS	6.0	6.0
CAPACITY	636	636
CAPACITY USED	28%	19%
IMPEDANCE FACTOR	0.79	0.87
ACTUAL CAPACITY	598	598

STEP 4 LEFT TURNS FROM	C:BEDFORD ST	D:GARAGE
CONFLICTING FLOWS	531	683
CRITICAL GAPS	6.5	6.5
CAPACITY	466	372
ACTUAL CAPACITY	377	246

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM A	120	1199	1079	A	3.34	0.11
ALL MOVES FROM C:	568	513	-55	F	INFINITE	INFINITE
ALL MOVES FROM D:	226	405	179	D	20.11	1.26

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1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:04-11-1989 TIME:05:47:55
KINGSTON/BEDFORD 1995 BUILD AM PEAK REVISED NETWORK

LAST DATASETS LOADED OR SAVED
VOLUME=19AM GEOMETRICS=19AM
KEY: D
:
A- -B
:
C

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000 YES
CONTROLS FROM C: YIELD
FROM D: STOP
PREVAILING SPEED: 30 MPH
MAIN STREET # OF LANES: 2 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: NO
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH C NB KINGSTON
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH: D: SB KINGSTON
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A EB BEDFORD	B: WB BEDFORD	C: NB KINGSTON	D: SB KINGSTON
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A EB BEDFORD			B: WB BEDFORD			C: NB KINGSTON			D: SB KINGSTON		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	0	0	179	123	375	0	0	1	0	0	219	223
PHF	0.88			0.88			0.88			0.88		
ADJ VOLUME	0	0	203	140	426	0	0	1	0	0	249	253
PERCENT GRADE	0.00			0.00			0.00					
PASS CAR/HR	0			154			0	1	0	0	274	279

STEP 1 RIGHT TURNS FROM	C:NB KINGSTON	D:SB KINGSTON
CONFLICTING FLOWS	102	426
CRITICAL GAPS	4.5	5.0
CAPACITY	1197	774
CAPACITY USED	0%	36%
IMPEDANCE FACTOR	1.00	0.71
ACTUAL CAPACITY	1197	774

1985 HCM - CHAPTER 10 UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:04-11-1989 TIME:06.47:55
KINGSTON/BEDFORD 1995 BUILD AM PEAK REVISED NETWORK

STEP 2 LEFT TURNS FROM	B:WB BEDFORD	A:EB BEDFORD
CONFLICTING FLOWS	203	426
CRITICAL GAPS	5.0	5.0
CAPACITY	979	774
CAPACITY USED	16%	0%
IMPEDANCE FACTOR	0.90	1.00
ACTUAL CAPACITY	979	774

STEP 3 THRU MOVES FROM	C:NB KINGSTON	D:SB KINGSTON
CONFLICTING FLOWS	668	769
CRITICAL GAPS	5.5	6.0
CAPACITY	508	381
CAPACITY USED	0%	72%
IMPEDANCE FACTOR	1.00	0.34
ACTUAL CAPACITY	455	341

STEP 4 LEFT TURNS FROM	C:NB KINGSTON	D:SB KINGSTON
CONFLICTING FLOWS	1170	770
CRITICAL GAPS	6.0	6.5
CAPACITY	212	327
ACTUAL CAPACITY	47	292

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM B	154	979	826	A	4.36	0.19
ALL MOVES FROM C	1	455	454	A	7.94	0.00
ALL MOVES FROM D	553	475	-77	F	INFINITE	INFINITE

.INCH PROGRAM VERSION DATE 4-29-1988
985 HCM - CHAPTER 10. UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
ATE.04-11-1989 TIME:06:51 54
INGSTON/BEDFORD-1995 NO BUILD PM PEAK REVISED NETWORK

AST DATASETS LOADED OR SAVED
OLUME=19PM GEOMETRICS=19PM
EY: D
:
A- -B
:
C

ENERAL CHARACTERISTICS
OPULATION GREATER THAN 250,000: YES
ONTROLS FROM C: YIELD
FROM D: STOP
REVAILING SPEED 30 MPH
AIN STREET # OF LANES: 2 LANES
AIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE. NO
AIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE. NO

INOR STREET LANES

PPROACH. C N5 KINGSTON
XCLUSIVE LEFT TURN LANES. NO
XCLUSIVE RIGHT TURN LANES: NO
ARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
IGHT TURN ACCELERATION LANE ON MAJOR. NO

PPROACH D. SB KINGSTON
XCLUSIVE LEFT TURN LANES: NO
XCLUSIVE RIGHT TURN LANES. NO
ARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
IGHT TURN ACCELERATION LANE ON MAJOR: NO

IGHT DISTANCE RESTRICTIONS (in seconds)

PPROACH	A EB BEDFORD	B. WB BEDFORD	C: NB KINGSTON	D: SB KINGSTON
EFTS	0.00	0.00	0.00	0.00
HRUS	0.00	0.00	0.00	0.00
IGHTS	0.00	0.00	0.00	0.00

PPROACH	A EB BEDFORD			B. WB BEDFORD			C: NB KINGSTON			D: SB KINGSTON		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
OLUME	0	0	340	130	212	0	0	1	0	0	382	229
HF	0.94			0.94			0.94			0.94		
DJ VOLUME	0	0	362	138	226	0	0	1	0	0	406	244
ERCENT GRADE	0.00			0.00			0.00					
ASS CAR/HR	0			152			0	1	0	0	447	268

TEP 1 RIGHT TURNS FROM	C:NB KINGSTON	D:SB KINGSTON
ONFLICTING FLOWS	181	226
RITICAL GAPS	4.5	5.0
APACITY	1114	957
APACITY USED	0%	28%
MPEDANCE FACTOR	1.00	0.79
CTUAL CAPACITY	1114	957

1985 HCM - CHAPTER 10 UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE:04-11-1989 TIME:06:51:54
KINGSTON/BEDFORD-1995 NO BUILD PM PEAK REVISED NETWORK

STEP 2 LEFT TURNS FROM	B:WB BEDFORD	A EB BEDFORD
CONFLICTING FLOWS	362	226
CRITICAL GAPS	5.0	5.0
CAPACITY	830	957
CAPACITY USED	18%	0%
IMPEDANCE FACTOR	0.87	1.00
ACTUAL CAPACITY	830	957

STEP 3 THRU MOVES FROM	C:NB KINGSTON	D:SB KINGSTON
CONFLICTING FLOWS	545	726
CRITICAL GAPS	5.5	6.0
CAPACITY	592	405
CAPACITY USED	0%	110%
IMPEDANCE FACTOR	1.00	0.00
ACTUAL CAPACITY	517	354

STEP 4 LEFT TURNS FROM	C:NB KINGSTON	D:SB KINGSTON
CONFLICTING FLOWS	1195	727
CRITICAL GAPS	6.0	6.5
CAPACITY	204	349
ACTUAL CAPACITY	0	305

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM B	152	830	678	A	5.31	0.22
ALL MOVES FROM C	1	0	-1	F	INFINITE	INFINITE
ALL MOVES FROM D:	715	464	-251	F	INFINITE	INFINITE

CINCH PROGRAM VERSION DATE 4-29-1988
1985 HCM - CHAPTER 10 UNSIGNALIZED - 4 APPROACHES (PAGE 1 OF 2)
DATE:04-11-1989 TIME:05.53:58
[KINGSTON/BEDFORD-1995 BUILD SAT PEAK REVISED NETWORK

LAST DATASETS LOADED OR SAVED
VOLUME=19SAT GEOMETRICS=19SAT
KEY: D
      |
    A- -B
      |
      C

GENERAL CHARACTERISTICS
POPULATION GREATER THAN 250,000: YES
CONTROLS: FROM C: YIELD
          FROM D: STOP
PREVAILING SPEED 30 MPH
MAIN STREET # OF LANES: 2 LANES
MAIN STREET APPROACH A - EXCLUSIVE RIGHT TURN LANE: NO
MAIN STREET APPROACH B - EXCLUSIVE RIGHT TURN LANE: NO

MINOR STREET LANES

APPROACH C: NB KINGSTON
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

APPROACH D: SB KINGSTON
EXCLUSIVE LEFT TURN LANES: NO
EXCLUSIVE RIGHT TURN LANES: NO
LARGE RIGHT TURN RADIUS OR SHALLOW RIGHT TURN ANGLE: NO
RIGHT TURN ACCELERATION LANE ON MAJOR: NO

SIGHT DISTANCE RESTRICTIONS (in seconds)

APPROACH	A: EB BEDFORD	B: WB BEDFORD	C: NB KINGSTON	D: SB KINGSTON
LEFTS	0.00	0.00	0.00	0.00
THRUS	0.00	0.00	0.00	0.00
RIGHTS	0.00	0.00	0.00	0.00

APPROACH	A: EB BEDFORD			B: WB BEDFORD			C: NB KINGSTON			D: SB KINGSTON		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
VOLUME	0	0	209	92	198	0	0	1	0	0	248	265
PHF	0.92			0.92			0.92			0.92		
ADJ VOLUME	0	0	227	100	215	0	0	1	0	0	270	288
PERCENT GRADE	0.00			0.00			0.00					
PASS CAR/HR	0			110			0	1	0	0	297	317

STEP 1 RIGHT TURNS FROM	C:NB KINGSTON	D:SB KINGSTON
CONFLICTING FLOWS	114	215
CRITICAL GAPS	4.5	5.0
CAPACITY	1184	968
CAPACITY USED	0%	33%
IMPEDANCE FACTOR	1.00	0.75
ACTUAL CAPACITY	1184	968

1985 HCM - CHAPTER 10: UNSIGNALIZED - 4 APPROACHES (PAGE 2 OF 2)
DATE.04-11-1989 TIME:06:53.58
[KINGSTON/BEDFORD-1995 BUILD SAT PEAK REVISED NETWORK

STEP 2 LEFT TURNS FROM	B.WB BEDFORD	A.EB BEDFORD
CONFLICTING FLOWS	227	215
CRITICAL GAPS	5.0	5.0
CAPACITY	956	968
CAPACITY USED	12%	0%
IMPEDANCE FACTOR	0.93	1.00
ACTUAL CAPACITY	956	968

STEP 3 THRU MOVES FROM	C:NB KINGSTON	D:SB KINGSTON
CONFLICTING FLOWS	429	542
CRITICAL GAPS	5.5	6.0
CAPACITY	681	520
CAPACITY USED	0%	57%
IMPEDANCE FACTOR	1.00	0.50
ACTUAL CAPACITY	632	483

STEP 4 LEFT TURNS FROM	C:NB KINGSTON	D:SB KINGSTON
CONFLICTING FLOWS	986	543
CRITICAL GAPS	6.0	6.5
CAPACITY	279	457
ACTUAL CAPACITY	97	424

SUMMARY OF LEVEL OF SERVICE BY MOVEMENT

MOVEMENT	DEMAND	CAPACITY	RESERVE	LOS	AVG DEL(SEC)	AVG QUEUE
LT FROM B	110	956	846	A	4.26	0.13
ALL MOVES FROM C:	1	632	631	A	5.71	0.00
ALL MOVES FROM D:	613	651	38	E	95.04	16.19

Level of Service Analysis with Mitigation

BOYLSTON ST/TREMONT ST

1995 NO BUILD AM PEAK WITH EXISTING NETWORK WITH MITIGATION

Date: 05-07-1989 Time: 13:57:08

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=4AM GEOMETRICS=4AM SIGNAL=4AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	BOYLSTON ST	0	870	157	1027	0	2	0	0.0	12.0	0.0	46
WB	BOYLSTON ST	0	0	0	0	0	0	0	0.0	0.0	0.0	24
NB	TREMONT ST	0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	TREMONT ST	551	902	273	1726	0	4	0	0.0	10.0	0.0	40

TOTAL VOLUME = 2753

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.930	600	Y	18.5	3
WB	0.0%	0.0%	N	10	0	.000	400	Y	18.5	3
NB	0.0%	0.0%	N	0	0	.000	500	Y	13.0	0
SB	-1.0%	2.0%	N	0	20	.930	700	Y	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1		*	*									*				*	40.7	4	A
2								*					*	*	*		41.3	4	A

CYCLE= 90.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	870	157	.930	0	935	169
WB	0	0	0	.000	0	0	0
NB	0	0	0	.000	0	0	0
SB	551	902	273	.930	592	970	294

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	TH-RT	1104	2	1.05	1160	0.00	0.15
SB	LT-TH-RT	1856	4	1.10	2042	0.32	0.16

BOYLSTON ST/TREMONT ST

1995 NO BUILD AM PEAK WITH EXISTING NETWORK WITH MITIGATION

date: 05-07-1989 time: 13:57:09

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH-RT	1800	2	1.000	0.990	1.000	1.000	0.979	0.900	0.941	1.000	2955
SB	LT-TH-RT	1800	4	0.933	0.990	1.005	1.000	0.979	0.900	0.976	0.891	5128

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH-RT	1160	2955	0.39	0.45	1336	0.87	*
SB	LT-TH-RT	2042	5128	0.40	0.46	2353	0.87	*

CYCLE= 90.0 LOST= 8.0 SUM V/S CRIT= 0.79 TOTAL V/C= 0.87

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH-RT	0.87	*	0.45	90.0	16.89	1336	5.17	0.85	18.75	C	15.1	46
SB	LT-TH-RT	0.87	*	0.46	90.0	16.64	2353	3.06	0.85	16.75	C	25.1	76

DIR	STREET	DELAY	LOS
EB	BOYLSTON ST	18.75	C
SB	TREMONT ST	16.75	C

INTERSECTION DELAY = 17.47 INTERSECTION LOS=C

THE EXISTING TIMING IS OPTIMAL

BOYLSTON ST/TREMONT ST
1995 NO BUILD PM PEAK WITH EXISTING NETWORK WITH MITIGATION
Date: 05-07-1989 Time: 13:59:36

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=4PM GEOMETRICS=4PM SIGNAL=4PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	BOYLSTON ST	0	861	331	1192	0	2	0	0.0	12.0	0.0	46
WB	BOYLSTON ST	0	0	0	0	0	0	0	0.0	0.0	0.0	24
NB	TREMONT ST	0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	TREMONT ST	427	1346	652	2425	0	4.	0	0.0	10.0	0.0	40

TOTAL VOLUME = 3617

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.920	600	Y	18.5	3
WB	0.0%	0.0%	N	10	0	.000	400	Y	18.5	3
NB	0.0%	0.0%	N	0	0	.000	500	Y	13.0	0
SB	-1.0%	2.0%	N	0	20	.920	700	Y	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1		*	*									*				*	38.6	4	A
2								*					*	*	*		43.4	4	A

CYCLE= 90.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	861	331	.920	0	936	360
WB	0	0	0	.000	0	0	0
NB	0	0	0	.000	0	0	0
SB	427	1346	652	.920	464	1463	709

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	TH-RT	1296	2	1.05	1360	0.00	0.28
SB	LT-TH-RT	2636	4	1.10	2899	0.18	0.27

BOYLSTON ST/TREMONT ST

1995 NO BUILD PM PEAK WITH EXISTING NETWORK WITH MITIGATION

date: 05-07-1989 time: 13:59:37

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH-RT	1800	2	1.000	0.990	1.000	1.000	0.979	0.900	0.892	1.000	2803
SB	LT-TH-RT	1800	4	0.933	0.990	1.005	1.000	0.979	0.900	0.960	0.940	5316

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH-RT	1360	2803	0.49	0.43	1202	1.13	*
SB	LT-TH-RT	2899	5316	0.55	0.48	2563	1.13	*

CYCLE= 90.0 LOST= 8.0 SUM V/S CRIT= 1.03 TOTAL V/C= 1.13

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH-RT	1.13	*	0.43	90.0	21.67	1202	54.67	0.85	64.88	F	39.6	
SB	LT-TH-RT	1.13	*	0.48	90.0	20.18	2563	50.17	0.85	59.80	E	74.0	

DIR	STREET	DELAY	LOS
EB	BOYLSTON ST	64.88	F
SB	TREMONT ST	59.80	E

INTERSECTION DELAY = 61.42 INTERSECTION LOS=F

THE EXISTING TIMING IS OPTIMAL

BOYLSTON ST/TREMONT ST
1995 BUILD AM PEAK WITH EXISTING NETWORK WITH MITIGATION
Date: 05-07-1989 Time: 14:17:18

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=4AM GEOMETRICS=4AM SIGNAL=4AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	BOYLSTON ST	0	919	157	1076	0	2	0	0.0	12.0	0.0	46
WB	BOYLSTON ST	0	0	0	0	0	0	0	0.0	0.0	0.0	24
NB	TREMONT ST	0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	TREMONT ST	660	902	296	1858	0	4	0	0.0	10.0	0.0	40

TOTAL VOLUME = 2934

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.930	600	Y	18.5	3
WB	0.0%	0.0%	N	10	0	.000	400	Y	18.5	3
NB	0.0%	0.0%	N	0	0	.000	500	Y	13.0	0
SB	-1.0%	2.0%	N	0	20	.930	700	Y	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1		*	*									*				*	39.8	4	A
2								*					*	*	*		42.2	4	A

CYCLE= 90.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	919	157	.930	0	988	169
WB	0	0	0	.000	0	0	0
NB	0	0	0	.000	0	0	0
SB	660	902	296	.930	710	970	318

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	TH-RT	1157	2	1.05	1215	0.00	0.15
SB	LT-TH-RT	1998	4	1.10	2198	0.36	0.16

BOYLSTON ST/TREMONT ST

1995 BUILD AM PEAK WITH EXISTING NETWORK WITH MITIGATION

date: 05-07-1989 time: 14:17:19

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH-RT	1800	2	1.000	0.990	1.000	1.000	0.979	0.900	0.943	1.000	2963
SB	LT-TH-RT	1800	4	0.933	0.990	1.005	1.000	0.979	0.900	0.976	0.879	5056

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH-RT	1215	2963	0.41	0.44	1310	0.93	*
SB	LT-TH-RT	2198	5056	0.43	0.47	2371	0.93	*

CYCLE= 90.0 LOST= 8.0 SUM V/S CRIT= 0.84 TOTAL V/C= 0.93

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH-RT	0.93	*	0.44	90.0	18.03	1310	9.09	0.85	23.05	C	17.7	
SB	LT-TH-RT	0.93	*	0.47	90.0	17.07	2371	5.59	0.85	19.26	C	27.2	

DIR	STREET	DELAY	LOS
EB	BOYLSTON ST	23.05	C
SB	TREMONT ST	19.26	C

INTERSECTION DELAY = 20.61 INTERSECTION LOS=C

THE EXISTING TIMING IS OPTIMAL

BOYLSTON ST/TREMONT ST
1995 BUILD PM PEAK WITH EXISTING NETWORK WITH MITIGATION
Date: 05-07-1989 Time: 14:19:30

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=4PM GEOMETRICS=4PM SIGNAL=4PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	BOYLSTON ST	0	888	331	1219	0	2	0	0.0	12.0	0.0	46
WB	BOYLSTON ST	0	0	0	0	0	0	0	0.0	0.0	0.0	24
NB	TREMONT ST	0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	TREMONT ST	629	1352	794	2775	0	4	0	0.0	10.0	0.0	40

TOTAL VOLUME = 3994

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.920	600	Y	18.5	3
WB	0.0%	0.0%	N	10	0	.000	400	Y	18.5	3
NB	0.0%	0.0%	N	0	0	.000	500	Y	13.0	0
SB	-1.0%	2.0%	N	0	20	.920	700	Y	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1		*	*									*				*	35.8	4	A
2								*					*	*	*		46.2	4	A

CYCLE= 90.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	888	331	.920	0	965	360
WB	0	0	0	.000	0	0	0
NB	0	0	0	.000	0	0	0
SB	629	1352	794	.920	684	1470	863

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	TH-RT	1325	2	1.05	1391	0.00	0.27
SB	LT-TH-RT	3016	4	1.10	3318	0.23	0.29

BOYLSTON ST/TREMONT ST

1995 BUILD PM PEAK WITH EXISTING NETWORK WITH MITIGATION

date: 05-07-1989 time: 14:19:31

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH-RT	1800	2	1.000	0.990	1.000	1.000	0.979	0.900	0.895	1.000	2810
SB	LT-TH-RT	1800	4	0.933	0.990	1.005	1.000	0.979	0.900	0.957	0.923	5205

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH-RT	1391	2810	0.50	0.40	1119	1.24	*
SB	LT-TH-RT	3318	5205	0.64	0.51	2669	1.24	*

CYCLE= 90.0 LOST= 8.0 SUM V/S CRIT= 1.13 TOTAL V/C= 1.24

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH-RT	1.24	*	0.40	90.0	24.53	1119	91.09	0.85	98.28	F	57.0	
SB	LT-TH-RT	1.24	*	0.51	90.0	22.39	2669	87.17	0.85	93.13	F	119.8	

DIR	STREET	DELAY	LOS
EB	BOYLSTON ST	98.28	F
SB	TREMONT ST	93.13	F

INTERSECTION DELAY = 94.65 INTERSECTION LOS=F

THE EXISTING TIMING IS OPTIMAL

BOYLSTON ST/TREMONT ST
1995 NO BUILD AM PEAK WITH REVISED NETWORK WITH MITIGATION
Date: 05-07-1989 Time: 14:02:26

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=4AM GEOMETRICS=4AM SIGNAL=

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	BOYLSTON ST	0	870	157	1027	0	2	0	0.0	12.0	0.0	46
WB	BOYLSTON ST	0	0	0	0	0	0	0	0.0	0.0	0.0	24
NB	TREMONT ST	0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	TREMONT ST	647	901	298	1846	0	4	0	0.0	10.0	0.0	40

TOTAL VOLUME = 2873

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.930	600	Y	18.5	3
WB	0.0%	0.0%	N	10	0	.000	400	Y	18.5	3
NB	0.0%	0.0%	N	0	0	.000	500	Y	13.0	0
SB	-1.0%	2.0%	N	0	20	.930	700	Y	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1		*	*									*				*	39.1	4	A
2								*					*	*	*		42.9	4	A

CYCLE= 90.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	870	157	.930	0	935	169
WB	0	0	0	.000	0	0	0
NB	0	0	0	.000	0	0	0
SB	647	901	298	.930	696	969	320

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	TH-RT	1104	2	1.05	1160	0.00	0.15
SB	LT-TH-RT	1985	4	1.10	2183	0.35	0.16

BOYLSTON ST/TREMONT ST

1995 NO BUILD AM PEAK WITH REVISED NETWORK WITH MITIGATION

date: 05-07-1989 time: 14:02:27

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH-RT	1800	2	1.000	0.990	1.000	1.000	0.979	0.900	0.941	1.000	2955
SB	LT-TH-RT	1800	4	0.933	0.990	1.005	1.000	0.979	0.900	0.976	0.881	5064

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH-RT	1160	2955	0.39	0.43	1283	0.90	*
SB	LT-TH-RT	2183	5064	0.43	0.48	2415	0.90	*

CYCLE= 90.0 LOST= 8.0 SUM V/S CRIT= 0.82 TOTAL V/C= 0.90

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH-RT	0.90	*	0.43	90.0	18.03	1283	7.42	0.85	21.63	C	16.4	50
SB	LT-TH-RT	0.90	*	0.48	90.0	16.45	2415	4.27	0.85	17.61	C	26.0	79

DIR	STREET	DELAY	LOS
EB	BOYLSTON ST	21.63	C
SB	TREMONT ST	17.61	C

INTERSECTION DELAY = 19.00 INTERSECTION LOS=C

THE EXISTING TIMING IS OPTIMAL

BOYLSTON ST/TREMONT ST
1995 NO BUILD PM PEAK WITH REVISED NETWORK WITH MITIGATION
Date: 05-07-1989 Time: 14:12:09

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=4PM GEOMETRICS=4PM SIGNAL=

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	BOYLSTON ST	0	861	331	1192	0	2	0	0.0	12.0	0.0	46
WB	BOYLSTON ST	0	0	0	0	0	0	0	0.0	0.0	0.0	24
NB	TREMONT ST	0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	TREMONT ST	416	1373	697	2486	0	4	0	0.0	10.0	0.0	40

TOTAL VOLUME = 3678

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.920	600	Y	18.5	3
WB	0.0%	0.0%	N	10	0	.000	400	Y	18.5	3
NB	0.0%	0.0%	N	0	0	.000	500	Y	13.0	0
SB	-1.0%	2.0%	N	0	20	.920	700	Y	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1		*	*									*				*	38.1	4	A
2								*					*	*	*		43.9	4	A

CYCLE= 90.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	861	331	.920	0	936	360
WB	0	0	0	.000	0	0	0
NB	0	0	0	.000	0	0	0
SB	416	1373	697	.920	452	1492	758

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	TH-RT	1296	2	1.05	1360	0.00	0.28
SB	LT-TH-RT	2702	4	1.10	2972	0.17	0.28

BOYLSTON ST/TREMONT ST

1995 NO BUILD PM PEAK WITH REVISED NETWORK WITH MITIGATION

date: 05-07-1989 time: 14:12:10

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH-RT	1800	2	1.000	0.990	1.000	1.000	0.979	0.900	0.892	1.000	2803
SB	LT-TH-RT	1800	4	0.933	0.990	1.005	1.000	0.979	0.900	0.958	0.943	5323

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH-RT	1360	2803	0.49	0.42	1187	1.15	*
SB	LT-TH-RT	2972	5323	0.56	0.49	2595	1.15	*

CYCLE= 90.0 LOST= 8.0 SUM V/S CRIT= 1.04 TOTAL V/C= 1.15

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH-RT	1.15	*	0.42	90.0	22.07	1187	59.19	0.85	69.07	F	41.6	126
SB	LT-TH-RT	1.15	*	0.49	90.0	20.35	2595	54.74	0.85	63.83	F	79.6	239

DIR	STREET	DELAY	LOS
EB	BOYLSTON ST	69.07	F
SB	TREMONT ST	63.83	F

INTERSECTION DELAY = 65.47 INTERSECTION LOS=F

THE EXISTING TIMING IS OPTIMAL

BOYLSTON ST/TREMONT ST
1995 BUILD AM PEAK WITH REVISED NETWORK WITH MITIGATION
Date: 05-07-1989 Time: 14:22:47

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=4AM GEOMETRICS=4AM SIGNAL=4AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	BOYLSTON ST	0	919	157	1076	0	2	0	0.0	12.0	0.0	46
WB	BOYLSTON ST	0	0	0	0	0	0	0	0.0	0.0	0.0	24
NB	TREMONT ST	0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	TREMONT ST	751	901	321	1973	0	4	0	0.0	10.0	0.0	40

TOTAL VOLUME = 3049

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.930	600	Y	18.5	3
WB	0.0%	0.0%	N	10	0	.000	400	Y	18.5	3
NB	0.0%	0.0%	N	0	0	.000	500	Y	13.0	0
SB	-1.0%	2.0%	N	0	20	.930	700	Y	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1		*	*									*				*	38.4	4	A
2								*					*	*	*		43.6	4	A

CYCLE= 90.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	919	157	.930	0	988	169
WB	0	0	0	.000	0	0	0
NB	0	0	0	.000	0	0	0
SB	751	901	321	.930	808	969	345

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	TH-RT	1157	2	1.05	1215	0.00	0.15
SB	LT-TH-RT	2122	4	1.10	2334	0.38	0.16

BOYLSTON ST/TREMONT ST
1995 BUILD AM PEAK WITH REVISED NETWORK WITH MITIGATION
date: 05-07-1989 time: 14:22:48

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH-RT	1800	2	1.000	0.990	1.000	1.000	0.979	0.900	0.943	1.000	2963
SB	LT-TH-RT	1800	4	0.933	0.990	1.005	1.000	0.979	0.900	0.976	0.870	5004

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH-RT	1215	2963	0.41	0.43	1263	0.96	*
SB	LT-TH-RT	2334	5004	0.47	0.48	2426	0.96	*

CYCLE= 90.0 LOST= 8.0 SUM V/S CRIT= 0.88 TOTAL V/C= 0.96

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH-RT	0.96	*	0.43	90.0	19.08	1263	13.24	0.85	27.48	D	19.8	60
SB	LT-TH-RT	0.96	*	0.48	90.0	17.01	2426	8.43	0.85	21.62	C	30.2	92

DIR	STREET	DELAY	LOS
EB	BOYLSTON ST	27.48	D
SB	TREMONT ST	21.62	C

INTERSECTION DELAY = 23.62 INTERSECTION LOS=C

THE EXISTING TIMING IS OPTIMAL

BOYLSTON ST/TREMONT ST
1995 BUILD PM PEAK WITH REVISED NETWORK WITH MITIGATION
Date: 05-07-1989 Time: 14:25:38

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=4PM GEOMETRICS=4PM SIGNAL=4PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	BOYLSTON ST	0	888	331	1219	0	2	0	0.0	12.0	0.0	46
WB	BOYLSTON ST	0	0	0	0	0	0	0	0.0	0.0	0.0	24
NB	TREMONT ST	0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	TREMONT ST	473	1373	825	2671	0	4.	0	0.0	10.0	0.0	40

TOTAL VOLUME = 3890

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.920	600	Y	18.5	3
WB	0.0%	0.0%	N	10	0	.000	400	Y	18.5	3
NB	0.0%	0.0%	N	0	0	.000	500	Y	13.0	0
SB	-1.0%	2.0%	N	0	20	.920	700	Y	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1		*	*									*				*	36.9	4	A
2								*					*	*	*		45.1	4	A

CYCLE= 90.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	888	331	.920	0	965	360
WB	0	0	0	.000	0	0	0
NB	0	0	0	.000	0	0	0
SB	473	1373	825	.920	514	1492	897

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	TH-RT	1325	2	1.05	1391	0.00	0.27
SB	LT-TH-RT	2903	4	1.10	3194	0.18	0.31

BOYLSTON ST/TREMONT ST

1995 BUILD PM PEAK WITH REVISED NETWORK WITH MITIGATION

date: 05-07-1989 time: 14:25:39

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH-RT	1800	2	1.000	0.990	1.000	1.000	0.979	0.900	0.895	1.000	2810
SB	LT-TH-RT	1800	4	0.933	0.990	1.005	1.000	0.979	0.900	0.954	0.940	5281

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH-RT	1391	2810	0.50	0.41	1153	1.21	*
SB	LT-TH-RT	3194	5281	0.60	0.50	2646	1.21	*

CYCLE= 90.0 LOST= 8.0 SUM V/S CRIT= 1.10 TOTAL V/C= 1.21

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH-RT	1.21	*	0.41	90.0	23.57	1153	79.10	0.85	87.27	F	51.5	155
SB	LT-TH-RT	1.21	*	0.50	90.0	21.55	2646	75.08	0.85	82.13	F	104.2	313

DIR	STREET	DELAY	LOS
EB	BOYLSTON ST	87.27	F
SB	TREMONT ST	82.13	F

INTERSECTION DELAY = 83.69 INTERSECTION LOS=F

THE EXISTING TIMING IS OPTIMAL

BOYLSTON ST/ESSEX ST/WASHINGTON ST
1995 NO BUILD AM PEAK WITH EXISTING NETWORK WITH MITIGATION
Date: 05-07-1989 Time: 16:21:55

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=7AM GEOMETRICS=7AM SIGNAL=7AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	BOYLSTON ST	191	886	0	1077	1	2	0	11.0	11.0	0.0	28
WB	ESSEX ST	0	0	0	0	0	0	0	0.0	0.0	0.0	31
NB	WASHINGTON ST	0	538	440	978	0	1	2	0.0	11.0	11.0	36
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	36

TOTAL VOLUME = 2055

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	0	.930	200	Y	14.8	4
WB	0.0%	0.0%	N	0	0	.000	200		14.8	0
NB	0.0%	2.0%	N	0	0	.930	550	Y	16.0	3
SB	0.0%	0.0%	N	0	0	.000	750	Y	16.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*	*										*					29.7	4	A
2				*						*	*						34.3	4	A
3				*				*				*				*	0.0	18	A

CYCLE= 90.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	191	886	0	.930	205	953	0
WB	0	0	0	.000	0	0	0
NB	0	538	440	.930	0	578	473
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT	205	1	1.00	205	1.00	0.00
EB	TH	953	2	1.05	1000	0.00	0.00
NB	TH	578	1	1.00	578	0.00	0.00
NB	RT	473	2	1.05	497	0.00	1.00

BOYLSTON ST/ESSEX ST/WASHINGTON ST
1995 NO BUILD AM PEAK WITH EXISTING NETWORK WITH MITIGATION
date: 05-07-1989 time: 16:21:56

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1473
EB	TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3101
NB	TH	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	1550
NB	RT	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	0.750	1.000	2326

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	205	1473	0.14	0.33	486	0.42	
EB	TH	1000	3101	0.32	0.33	1023	0.98	*
NB	TH	578	1550	0.37	0.38	591	0.98	*
NB	RT	497	2326	0.21	0.38	887	0.56	

CYCLE= 90.0 LOST=26.0 SUM V/S CRIT= 0.70 TOTAL V/C= 0.98

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	0.42		0.33	90.0	17.85	486	0.00	1.00	17.85	C	3.4	11
EB	TH	0.98	*	0.33	90.0	22.68	1023	17.74	0.77	31.24	D	18.7	57
NB	TH	0.98	*	0.38	90.0	20.88	591	24.33	0.85	38.43	D	12.5	38
NB	RT	0.56		0.38	90.0	16.64	887	0.42	0.85	14.51	B	7.3	23

DIR	STREET	DELAY	LOS
EB	BOYLSTON ST	28.96	D
NB	WASHINGTON ST	27.38	D

INTERSECTION DELAY = 28.21 INTERSECTION LOS=D

THE EXISTING TIMING IS OPTIMAL

BOYLSTON ST/ESSEX ST/WASHINGTON ST
1995 NO BUILD PM PEAK WITH EXISTING NETWORK WITH MITIGATION
Date: 05-07-1989 Time: 16:20:22

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=7PM GEOMETRICS=7PM SIGNAL=7PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	BOYLSTON ST	381	1215	0	1596	1	2	0	11.0	11.0	0.0	28
WB	ESSEX ST	0	0	0	0	0	0	0	0.0	0.0	0.0	31
NB	WASHINGTON ST	0	425	509	934	0	1	2	0.0	11.0	11.0	36
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	36

TOTAL VOLUME = 2530

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	0	.910	200	Y	14.8	4
WB	0.0%	0.0%	N	0	0	.000	200		14.8	0
NB	0.0%	2.0%	N	0	0	.910	590	Y	16.0	3
SB	0.0%	0.0%	N	0	0	.000	750	Y	16.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*	*										*					38.4	4	A
2				*						*	*						25.6	4	A
3				*				*				*				*	0.0	18	A

CYCLE= 90.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	381	1215	0	.910	419	1335	0
WB	0	0	0	.000	0	0	0
NB	0	425	509	.910	0	467	559
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT	419	1	1.00	419	1.00	0.00
EB	TH	1335	2	1.05	1402	0.00	0.00
NB	TH	467	1	1.00	467	0.00	0.00
NB	RT	559	2	1.05	587	0.00	1.00

BOYLSTON ST/ESSEX ST/WASHINGTON ST

1995 NO BUILD PM PEAK WITH EXISTING NETWORK WITH MITIGATION

date: 05-07-1989 time: 16:20:24

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1473
EB	TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3101
NB	TH	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	1550
NB	RT	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	0.750	1.000	2326

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	419	1473	0.28	0.43	629	0.67	
EB	TH	1402	3101	0.45	0.43	1323	1.06	*
NB	TH	467	1550	0.30	0.28	441	1.06	*
NB	RT	587	2326	0.25	0.28	661	0.89	

CYCLE= 90.0 LOST=26.0 SUM V/S CRIT= 0.75 TOTAL V/C= 1.06

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	0.67		0.43	90.0	15.70	629	2.15	1.00	17.85	C	6.0	
EB	TH	1.06	*	0.43	90.0	20.51	1323	32.85	0.80	42.51	E	30.1	
NB	TH	1.06	*	0.28	90.0	25.07	441	46.60	0.85	60.92	F	14.5	
NB	RT	0.89		0.28	90.0	23.43	661	11.25	0.85	29.48	D	11.0	

DIR	STREET	DELAY	LOS
EB	BOYLSTON ST	36.84	D
NB	WASHINGTON ST	43.41	E

INTERSECTION DELAY = 39.25 INTERSECTION LOS=D

THE EXISTING TIMING IS OPTIMAL

BOYLSTON ST/ESSEX ST/WASHINGTON ST
1995 NO BUILD SAT PEAK WITH EXISTING NETWORK WITH MITIGATION
Date: 05-07-1989 Time: 16:32:33

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=7SAT GEOMETRICS=7SAT SIGNAL=7SAT

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	BOYLSTON ST	331	919	0	1250	1	2	0	11.0	11.0	0.0	28
WB	ESSEX ST	0	0	0	0	0	0	0	0.0	0.0	0.0	31
NB	WASHINGTON ST	0	338	290	628	0	1	2	0.0	11.0	11.0	36
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	36

TOTAL VOLUME = 1878

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	0	.930	200	Y	14.8	4
WB	0.0%	0.0%	N	0	0	.000	200		14.8	0
NB	0.0%	2.0%	N	0	0	.930	550	Y	16.0	3
SB	0.0%	0.0%	N	0	0	.000	750	Y	16.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*	*										*					37.6	4	A
2				*						*	*						26.4	4	A
3				*				*				*				*	0.0	18	A

CYCLE= 90.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	331	919	0	.930	356	988	0
WB	0	0	0	.000	0	0	0
NB	0	338	290	.930	0	363	312
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT	356	1	1.00	356	1.00	0.00
EB	TH	988	2	1.05	1038	0.00	0.00
NB	TH	363	1	1.00	363	0.00	0.00
NB	RT	312	2	1.05	327	0.00	1.00

BOYLSTON ST/ESSEX ST/WASHINGTON ST
1995 NO BUILD SAT PEAK WITH EXISTING NETWORK WITH MITIGATION
date: 05-07-1989 time: 16:32:34

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1473
EB	TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3101
NB	TH	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	1550
NB	RT	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	0.750	1.000	2326

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	356	1473	0.24	0.42	616	0.58	
EB	TH	1038	3101	0.33	0.42	1297	0.80	*
NB	TH	363	1550	0.23	0.29	454	0.80	*
NB	RT	327	2326	0.14	0.29	681	0.48	

CYCLE= 90.0 LOST=26.0 SUM V/S CRIT= 0.57 TOTAL V/C= 0.80

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	0.58		0.42	90.0	15.27	616	0.82	1.00	16.09	C	5.2	16
EB	TH	0.80	*	0.42	90.0	17.40	1297	3.07	0.71	14.55	B	14.4	44
NB	TH	0.80	*	0.29	90.0	22.33	454	8.18	0.85	25.94	D	6.6	21
NB	RT	0.48		0.29	90.0	19.90	681	0.00	0.85	16.91	C	5.5	17

DIR	STREET	DELAY	LOS
EB	BOYLSTON ST	14.94	B
NB	WASHINGTON ST	21.66	C

INTERSECTION DELAY = 17.17 INTERSECTION LOS=C

THE EXISTING TIMING IS OPTIMAL

BOYLSTON ST/ESSEX ST/WASHINGTON ST
1995 BUILD AM PEAK WITH EXISTING NETWORK WITH MITIGATION
Date: 05-07-1989 Time: 16:11:07

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=7AM GEOMETRICS=7AM SIGNAL=7AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	BOYLSTON ST	109	1253	0	1362	1	2	0	11.0	11.0	0.0	28
WB	ESSEX ST	0	0	0	0	0	0	0	0.0	0.0	0.0	31
NB	WASHINGTON ST	0	469	534	1003	0	1	2	0.0	11.0	11.0	36
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	36

TOTAL VOLUME = 2365

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	0	.930	200	Y	14.8	4
WB	0.0%	0.0%	N	0	0	.000	200		14.8	0
NB	0.0%	2.0%	N	0	0	.930	550	Y	16.0	3
SB	0.0%	0.0%	N	0	0	.000	750	Y	16.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*	*										*					37.4	4	A
2				*						*	*						26.6	4	A
3				*				*				*				*	0.0	18	A

CYCLE= 90.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	109	1253	0	.930	117	1347	0
WB	0	0	0	.000	0	0	0
NB	0	469	534	.930	0	504	574
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT	117	1	1.00	117	1.00	0.00
EB	TH	1347	2	1.05	1415	0.00	0.00
NB	TH	504	1	1.00	504	0.00	0.00
NB	RT	574	2	1.05	603	0.00	1.00

BOYLSTON ST/ESSEX ST/WASHINGTON ST
1995 BUILD AM PEAK WITH EXISTING NETWORK WITH MITIGATION
date: 05-07-1989 time: 16:11:08

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1473
EB	TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3101
NB	TH	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	1550
NB	RT	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	0.750	1.000	2326

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	117	1473	0.08	0.42	611	0.19	
EB	TH	1415	3101	0.46	0.42	1287	1.10	*
NB	TH	504	1550	0.33	0.30	459	1.10	*
NB	RT	603	2326	0.26	0.30	688	0.88	

CYCLE= 90.0 LOST=26.0 SUM V/S CRIT= 0.78 TOTAL V/C= 1.10

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	0.19		0.42	90.0	12.71	611	0.00	1.00	12.71	B	1.7	6
EB	TH	1.10	*	0.42	90.0	21.51	1287	44.29	0.81	53.13	E	35.7	108
NB	TH	1.10	*	0.30	90.0	25.12	459	56.39	0.85	69.29	F	17.1	52
NB	RT	0.88		0.30	90.0	22.88	688	9.89	0.85	27.86	D	10.8	33

DIR	STREET	DELAY	LOS
EB	BOYLSTON ST	50.04	E
NB	WASHINGTON ST	46.73	E

INTERSECTION DELAY = 48.65 INTERSECTION LOS=E

THE EXISTING TIMING IS OPTIMAL

BOYLSTON ST/ESSEX ST/WASHINGTON ST
1995 BUILD PM PEAK WITH EXISTING NETWORK WITH MITIGATION
Date: 05-07-1989 Time: 16:13:39

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=7PM GEOMETRICS=7PM SIGNAL=7PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	BOYLSTON ST	290	1535	0	1825	1	2	0	11.0	11.0	0.0	28
WB	ESSEX ST	0	0	0	0	0	0	0	0.0	0.0	0.0	31
NB	WASHINGTON ST	0	412	535	947	0	1	2	0.0	11.0	11.0	36
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	36

TOTAL VOLUME = 2772

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	0	.910	200	Y	14.8	4
WB	0.0%	0.0%	N	0	0	.000	200		14.8	0
NB	0.0%	2.0%	N	0	0	.910	590	Y	16.0	3
SB	0.0%	0.0%	N	0	0	.000	750	Y	16.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*	*										*					42.3	4	A
2				*						*	*						21.7	4	A
3				*				*				*				*	0.0	18	A

CYCLE= 90.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	290	1535	0	.910	319	1687	0
WB	0	0	0	.000	0	0	0
NB	0	412	535	.910	0	453	588
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT	319	1	1.00	319	1.00	0.00
EB	TH	1687	2	1.05	1771	0.00	0.00
NB	TH	453	1	1.00	453	0.00	0.00
NB	RT	588	2	1.05	617	0.00	1.00

BOYLSTON ST/ESSEX ST/WASHINGTON ST
1995 BUILD PM PEAK WITH EXISTING NETWORK WITH MITIGATION
date: 05-07-1989 time: 16:13:40

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1473
EB	TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3101
NB	TH	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	1550
NB	RT	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	0.750	1.000	2326

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	319	1473	0.22	0.47	693	0.46	
EB	TH	1771	3101	0.57	0.47	1459	1.21	*
NB	TH	453	1550	0.29	0.24	373	1.21	*
NB	RT	617	2326	0.27	0.24	559	1.10	

CYCLE= 90.0 LOST=26.0 SUM V/S CRIT= 0.86 TOTAL V/C= 1.21

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	0.46		0.47	90.0	12.23	693	0.00	1.00	12.23	B	4.2	14
EB	TH	1.21	*	0.47	90.0	22.36	1459	79.85	0.84	85.48	F	63.2	190
NB	TH	1.21	*	0.24	90.0	27.86	373	93.57	0.85	103.21	F	21.2	64
NB	RT	1.10		0.24	90.0	26.85	559	54.65	0.85	69.28	F	20.3	62

DIR	STREET	DELAY	LOS
EB	BOYLSTON ST	74.31	F
NB	WASHINGTON ST	83.64	F

INTERSECTION DELAY = 77.47 INTERSECTION LOS=F

THE EXISTING TIMING IS OPTIMAL

BOYLSTON ST/ESSEX ST/WASHINGTON ST
1995 BUILD SAT PEAK WITH EXISTING NETWORK WITH MITIGATION
Date: 05-07-1989 Time: 16:34:27

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=7SAT GEOMETRICS=7SAT SIGNAL=7SAT

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	BOYLSTON ST	260	1230	0	1490	1	2	0	11.0	11.0	0.0	28
WB	ESSEX ST	0	0	0	0	0	0	0	0.0	0.0	0.0	31
NB	WASHINGTON ST	0	290	353	643	0	1	2	0.0	11.0	11.0	36
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	36

TOTAL VOLUME = 2133

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	0	.930	200	Y	14.8	4
WB	0.0%	0.0%	N	0	0	.000	200		14.8	0
NB	0.0%	2.0%	N	0	0	.930	550	Y	16.0	3
SB	0.0%	0.0%	N	0	0	.000	750	Y	16.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*	*										*					44.2	4	A
2				*						*	*						19.8	4	A
3				*				*				*				*	0.0	18	A

CYCLE= 90.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	260	1230	0	.930	280	1323	0
WB	0	0	0	.000	0	0	0
NB	0	290	353	.930	0	312	380
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT	280	1	1.00	280	1.00	0.00
EB	TH	1323	2	1.05	1389	0.00	0.00
NB	TH	312	1	1.00	312	0.00	0.00
NB	RT	380	2	1.05	399	0.00	1.00

BOYLSTON ST/ESSEX ST/WASHINGTON ST
1995 BUILD SAT PEAK WITH EXISTING NETWORK WITH MITIGATION
date: 05-07-1989 time: 16:34:28

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1473
EB	TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3101
NB	TH	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	1550
NB	RT	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	0.750	1.000	2326

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	280	1473	0.19	0.49	723	0.39	
EB	TH	1389	3101	0.45	0.49	1522	0.91	*
NB	TH	312	1550	0.20	0.22	342	0.91	*
NB	RT	399	2326	0.17	0.22	513	0.78	

CYCLE= 90.0 LOST=26.0 SUM V/S CRIT= 0.65 TOTAL V/C= 0.91

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	0.39		0.49	90.0	10.95	723	0.00	1.00	10.95	B	3.6	12
EB	TH	0.91	*	0.49	90.0	16.06	1522	6.98	0.75	17.32	C	16.8	51
NB	TH	0.91	*	0.22	90.0	26.02	342	22.09	0.85	40.90	E	7.6	24
NB	RT	0.78		0.22	90.0	25.09	513	6.23	0.85	26.62	D	7.4	23

DIR	STREET	DELAY	LOS
EB	BOYLSTON ST	16.25	C
NB	WASHINGTON ST	32.89	D

INTERSECTION DELAY = 21.22 INTERSECTION LOS=C

THE EXISTING TIMING IS OPTIMAL

BOYLSTON ST/ESSEX ST/WASHINGTON ST
1995 NO BUILD AM PEAK WITH REVISED NETWORK WITH MITIGATION
Date: 05-07-1989 Time: 16:25:25

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=7AM GEOMETRICS=7AM SIGNAL=7AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	BOYLSTON ST	89	1083	0	1172	1	2	0	11.0	11.0	0.0	28
WB	ESSEX ST	0	0	0	0	0	0	0	0.0	0.0	0.0	31
NB	WASHINGTON ST	0	287	528	815	0	1	2	0.0	11.0	11.0	36
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	36

TOTAL VOLUME = 1967

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	0	.930	200	Y	14.8	4
WB	0.0%	0.0%	N	0	0	.000	200		14.8	0
NB	0.0%	2.0%	N	0	0	.930	550	Y	16.0	3
SB	0.0%	0.0%	N	0	0	.000	750	Y	16.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*	*										*					38.8	4	A
2				*						*	*						25.2	4	A
3				*				*				*				*	0.0	18	A

CYCLE= 90.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	89	1083	0	.930	96	1165	0
WB	0	0	0	.000	0	0	0
NB	0	287	528	.930	0	309	568
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT	96	1	1.00	96	1.00	0.00
EB	TH	1165	2	1.05	1223	0.00	0.00
NB	TH	309	1	1.00	309	0.00	0.00
NB	RT	568	2	1.05	596	0.00	1.00

BOYLSTON ST/ESSEX ST/WASHINGTON ST
1995 NO BUILD AM PEAK WITH REVISED NETWORK WITH MITIGATION
date: 05-07-1989 time: 16:25:26

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1473
EB	TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3101
NB	TH	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	1550
NB	RT	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	0.750	1.000	2326

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	96	1473	0.06	0.43	635	0.15	
EB	TH	1223	3101	0.39	0.43	1336	0.91	*
NB	TH	309	1550	0.20	0.28	434	0.71	
NB	RT	596	2326	0.26	0.28	652	0.91	*

CYCLE= 90.0 LOST=26.0 SUM V/S CRIT= 0.65 TOTAL V/C= 0.91

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	0.15		0.43	90.0	11.84	635	0.00	1.00	11.84	B	1.4	5
EB	TH	0.91	*	0.43	90.0	18.28	1336	7.95	0.75	19.74	C	16.6	51
NB	TH	0.71		0.28	90.0	22.13	434	4.44	0.85	22.58	C	5.6	18
NB	RT	0.91	*	0.28	90.0	23.83	652	14.03	0.85	32.18	D	11.7	36

DIR	STREET	DELAY	LOS
EB	BOYLSTON ST	19.17	C
NB	WASHINGTON ST	28.91	D

INTERSECTION DELAY = 23.13 INTERSECTION LOS=C

THE EXISTING TIMING IS OPTIMAL

BOYLSTON ST/ESSEX ST/WASHINGTON ST
1995 NO BUILD PM PEAK WITH REVISED NETWORK WITH MITIGATION
Date: 05-07-1989 Time: 16:27:43

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=7PM GEOMETRICS=7PM SIGNAL=7PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	BOYLSTON ST	238	1348	0	1586	1	2	0	11.0	11.0	0.0	28
WB	ESSEX ST	0	0	0	0	0	0	0	0.0	0.0	0.0	31
NB	WASHINGTON ST	0	293	482	775	0	1	2	0.0	11.0	11.0	36
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	36

TOTAL VOLUME = 2361

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	0	.910	200	Y	14.8	4
WB	0.0%	0.0%	N	0	0	.000	200		14.8	0
NB	0.0%	2.0%	N	0	0	.910	590	Y	16.0	3
SB	0.0%	0.0%	N	0	0	.000	750	Y	16.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*	*										*					43.3	4	A
2				*						*	*						20.7	4	A
3				*				*				*				*	0.0	18	A

CYCLE= 90.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	238	1348	0	.910	262	1481	0
WB	0	0	0	.000	0	0	0
NB	0	293	482	.910	0	322	530
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT	262	1	1.00	262	1.00	0.00
EB	TH	1481	2	1.05	1555	0.00	0.00
NB	TH	322	1	1.00	322	0.00	0.00
NB	RT	530	2	1.05	556	0.00	1.00

BOYLSTON ST/ESSEX ST/WASHINGTON ST

1995 NO BUILD PM PEAK WITH REVISED NETWORK WITH MITIGATION

date: 05-07-1989 time: 16:27:44

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1473
EB	TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3101
NB	TH	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	1550
NB	RT	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	0.750	1.000	2326

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	262	1473	0.18	0.48	709	0.37	
EB	TH	1555	3101	0.50	0.48	1493	1.04	*
NB	TH	322	1550	0.21	0.23	356	0.90	
NB	RT	556	2326	0.24	0.23	534	1.04	*

CYCLE= 90.0 LOST=26.0 SUM V/S CRIT= 0.74 TOTAL V/C= 1.04

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	0.37		0.48	90.0	11.18	709	0.00	1.00	11.18	B	3.4	11
EB	TH	1.04	*	0.48	90.0	18.44	1493	27.18	0.79	36.12	D	28.9	88
NB	TH	0.90		0.23	90.0	25.62	356	20.38	0.85	39.10	D	7.6	24
NB	RT	1.04	*	0.23	90.0	26.68	534	39.19	0.85	55.99	E	15.8	48

DIR	STREET	DELAY	LOS
EB	BOYLSTON ST	32.53	D
NB	WASHINGTON ST	49.80	E

INTERSECTION DELAY = 38.15 INTERSECTION LOS=D

THE EXISTING TIMING IS OPTIMAL

BOYLSTON ST/ESSEX ST/WASHINGTON ST

1995 NO BUILD SAT PEAK WITH REVISED NETWORK WITH MITGATION

Date: 05-07-1989 Time: 16:30:40

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=7SAT GEOMETRICS=7SAT SIGNAL=7SAT

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	BOYLSTON ST	190	1175	0	1365	1	2	0	11.0	11.0	0.0	28
WB	ESSEX ST	0	0	0	0	0	0	0	0.0	0.0	0.0	31
NB	WASHINGTON ST	0	156	397	553	0	1	2	0.0	11.0	11.0	36
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	36

TOTAL VOLUME = 1918

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	0	.930	200	Y	14.8	4
WB	0.0%	0.0%	N	0	0	.000	200		14.8	0
NB	0.0%	2.0%	N	0	0	.930	550	Y	16.0	3
SB	0.0%	0.0%	N	0	0	.000	750	Y	16.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*	*										*					44.1	4	A
2				*						*	*						19.9	4	A
3				*				*				*				*	0.0	18	A

CYCLE= 90.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	190	1175	0	.930	204	1263	0
WB	0	0	0	.000	0	0	0
NB	0	156	397	.930	0	168	427
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT	204	1	1.00	204	1.00	0.00
EB	TH	1263	2	1.05	1327	0.00	0.00
NB	TH	168	1	1.00	168	0.00	0.00
NB	RT	427	2	1.05	448	0.00	1.00

BOYLSTON ST/ESSEX ST/WASHINGTON ST
1995 NO BUILD SAT PEAK WITH REVISED NETWORK WITH MITGATION
date: 05-07-1989 time: 16:30:41

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1473
EB	TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3101
NB	TH	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	1550
NB	RT	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	0.750	1.000	2326

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	204	1473	0.14	0.49	722	0.28	
EB	TH	1327	3101	0.43	0.49	1520	0.87	*
NB	TH	168	1550	0.11	0.22	342	0.49	
NB	RT	448	2326	0.19	0.22	514	0.87	*

CYCLE= 90.0 LOST=26.0 SUM V/S CRIT= 0.62 TOTAL V/C= 0.87

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	0.28		0.49	90.0	10.32	722	0.00	1.00	10.32	B	2.6	9
EB	TH	0.87	*	0.49	90.0	15.53	1520	4.80	0.74	15.00	C	16.1	49
NB	TH	0.49		0.22	90.0	23.28	342	0.00	0.85	19.79	C	3.3	11
NB	RT	0.87	*	0.22	90.0	25.72	514	12.32	0.85	32.33	D	9.1	28

DIR	STREET	DELAY	LOS
EB	BOYLSTON ST	14.38	B
NB	WASHINGTON ST	28.92	D

INTERSECTION DELAY = 18.55 INTERSECTION LOS=C

THE EXISTING TIMING IS OPTIMAL

BOYLSTON ST/ESSEX ST/WASHINGTON ST
1995 BUILD AM PEAK WITH REVISED NETWORK WITH MITIGATION
Date: 05-07-1989 Time: 16:01:28

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=7AM GEOMETRICS=7AM SIGNAL=7AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	BOYLSTON ST	89	1236	0	1325	1	2	0	11.0	11.0	0.0	28
WB	ESSEX ST	0	0	0	0	0	0	0	0.0	0.0	0.0	31
NB	WASHINGTON ST	0	287	552	839	0	1	2	0.0	11.0	11.0	36
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	36

TOTAL VOLUME = 2164

TRAFFIC & ROADWAY CONDITIONS

			ADJ	PARK			PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	0	.930	200	Y	14.8	4
WB	0.0%	0.0%	N	0	0	.000	200		14.8	0
NB	0.0%	2.0%	N	0	0	.930	550	Y	16.0	3
SB	0.0%	0.0%	N	0	0	.000	750	Y	16.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*	*										*					40.1	4	A
2				*						*	*						23.9	4	A
3				*				*				*				*	0.0	18	A

CYCLE= 90.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	89	1236	0	.930	96	1329	0
WB	0	0	0	.000	0	0	0
NB	0	287	552	.930	0	309	594
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT	96	1	1.00	96	1.00	0.00
EB	TH	1329	2	1.05	1395	0.00	0.00
NB	TH	309	1	1.00	309	0.00	0.00
NB	RT	594	2	1.05	623	0.00	1.00

BOYLSTON ST/ESSEX ST/WASHINGTON ST
1995 BUILD AM PEAK WITH REVISED NETWORK WITH MITIGATION
date: 05-07-1989 time: 16:01:29

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1473
EB	TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3101
NB	TH	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	1550
NB	RT	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	0.750	1.000	2326

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	96	1473	0.06	0.45	657	0.15	
EB	TH	1395	3101	0.45	0.45	1382	1.01	*
NB	TH	309	1550	0.20	0.27	412	0.75	
NB	RT	623	2326	0.27	0.27	617	1.01	*

CYCLE= 90.0 LOST=26.0 SUM V/S CRIT= 0.72 TOTAL V/C= 1.01

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	0.15		0.45	90.0	11.24	657	0.00	1.00	11.24	B	1.3	5
EB	TH	1.01	*	0.45	90.0	19.11	1382	20.54	0.78	31.01	D	24.1	73
NB	TH	0.75		0.27	90.0	23.04	412	6.27	0.85	24.91	C	5.7	18
NB	RT	1.01	*	0.27	90.0	25.21	617	29.84	0.85	46.79	E	15.5	47

DIR	STREET	DELAY	LOS
EB	BOYLSTON ST	29.74	D
NB	WASHINGTON ST	39.55	D

INTERSECTION DELAY = 33.51 INTERSECTION LOS=D

THE EXISTING TIMING IS OPTIMAL

BOYLSTON ST/ESSEX ST/WASHINGTON ST
1995 BUILD PM PEAK WITH REVISED NETWORK WITH MITIGATION
Date: 05-07-1989 Time: 16:09:18

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=7PM GEOMETRICS=7PM SIGNAL=7PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	BOYLSTON ST	238	1433	0	1671	1	2	0	11.0	11.0	0.0	28
WB	ESSEX ST	0	0	0	0	0	0	0	0.0	0.0	0.0	31
NB	WASHINGTON ST	0	293	496	789	0	1	2	0.0	11.0	11.0	36
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	36

TOTAL VOLUME = 2460

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	0	.910	200	Y	14.8	4
WB	0.0%	0.0%	N	0	0	.000	200		14.8	0
NB	0.0%	2.0%	N	0	0	.910	590	Y	16.0	3
SB	0.0%	0.0%	N	0	0	.000	750	Y	16.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*	*										*					43.8	4	A
2				*						*	*						20.2	4	A
3				*				*				*				*	0.0	18	A

CYCLE= 90.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	238	1433	0	.910	262	1575	0
WB	0	0	0	.000	0	0	0
NB	0	293	496	.910	0	322	545
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT	262	1	1.00	262	1.00	0.00
EB	TH	1575	2	1.05	1653	0.00	0.00
NB	TH	322	1	1.00	322	0.00	0.00
NB	RT	545	2	1.05	572	0.00	1.00

BOYLSTON ST/ESSEX ST/WASHINGTON ST
1995 BUILD PM PEAK WITH REVISED NETWORK WITH MITIGATION
date: 05-07-1989 time: 16:09:19

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1473
EB	TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3101
NB	TH	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	1550
NB	RT	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	0.750	1.000	2326

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	262	1473	0.18	0.49	717	0.36	
EB	TH	1653	3101	0.53	0.49	1509	1.10	*
NB	TH	322	1550	0.21	0.22	348	0.92	
NB	RT	572	2326	0.25	0.22	522	1.10	*

CYCLE= 90.0 LOST=26.0 SUM V/S CRIT= 0.78 TOTAL V/C= 1.10

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	0.36		0.49	90.0	10.96	717	0.00	1.00	10.96	B	3.4	11
EB	TH	1.10	*	0.49	90.0	19.31	1509	42.14	0.81	49.58	E	38.3	116
NB	TH	0.92		0.22	90.0	25.96	348	23.56	0.85	42.09	E	8.0	25
NB	RT	1.10	*	0.22	90.0	27.28	522	53.57	0.85	68.72	F	18.8	57

DIR	STREET	DELAY	LOS
EB	BOYLSTON ST	44.30	E
NB	WASHINGTON ST	59.13	E

INTERSECTION DELAY = 49.02 INTERSECTION LOS=E

THE EXISTING TIMING IS OPTIMAL

BOYLSTON ST/ESSEX ST/WASHINGTON ST
1995 BUILD SAT PEAK WITH REVISED NETWORK WITH MITIGATION
Date: 05-07-1989 Time: 16:36:10

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=7SAT GEOMETRICS=7SAT SIGNAL=7SAT

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	BOYLSTON ST	190	1267	0	1457	1	2	0	11.0	11.0	0.0	28
WB	ESSEX ST	0	0	0	0	0	0	0	0.0	0.0	0.0	31
NB	WASHINGTON ST	0	156	412	568	0	1	2	0.0	11.0	11.0	36
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	36

TOTAL VOLUME = 2025

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	0	.930	200	Y	14.8	4
WB	0.0%	0.0%	N	0	0	.000	200		14.8	0
NB	0.0%	2.0%	N	0	0	.930	550	Y	16.0	3
SB	0.0%	0.0%	N	0	0	.000	750	Y	16.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*	*										*					44.6	4	A
2				*						*	*						19.4	4	A
3				*				*				*				*	0.0	18	A

CYCLE= 90.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	190	1267	0	.930	204	1362	0
WB	0	0	0	.000	0	0	0
NB	0	156	412	.930	0	168	443
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT	204	1	1.00	204	1.00	0.00
EB	TH	1362	2	1.05	1430	0.00	0.00
NB	TH	168	1	1.00	168	0.00	0.00
NB	RT	443	2	1.05	465	0.00	1.00

BOYLSTON ST/ESSEX ST/WASHINGTON ST
1995 BUILD SAT PEAK WITH REVISED NETWORK WITH MITIGATION
date: 05-07-1989 time: 16:36:11

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1473
EB	TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3101
NB	TH	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	1550
NB	RT	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	0.750	1.000	2326

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT	204	1473	0.14	0.50	731	0.28	
EB	TH	1430	3101	0.46	0.50	1538	0.93	*
NB	TH	168	1550	0.11	0.22	333	0.50	
NB	RT	465	2326	0.20	0.22	500	0.93	*

CYCLE= 90.0 LOST=26.0 SUM V/S CRIT= 0.66 TOTAL V/C= 0.93

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT	0.28		0.50	90.0	10.08	731	0.00	1.00	10.08	B	2.6	9
EB	TH	0.93	*	0.50	90.0	16.12	1538	8.24	0.76	18.45	C	17.7	54
NB	TH	0.50		0.22	90.0	23.63	333	0.05	0.85	20.13	C	3.3	11
NB	RT	0.93	*	0.22	90.0	26.34	500	19.03	0.85	38.56	D	10.5	32

DIR	STREET	DELAY	LOS
EB	BOYLSTON ST	17.41	C
NB	WASHINGTON ST	33.68	D

INTERSECTION DELAY = 21.95 INTERSECTION LOS=C

THE EXISTING TIMING IS OPTIMAL

ESSEX ST/HARRISON AVE EXT
1995 NO BUILD AM PEAK WITH EXISTING NETWORK WITH MITIGATION
Date: 05-07-1989 Time: 17:47:58

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME= GEOMETRICS= SIGNAL=

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	ESSEX ST	404	616	243	1263	0	2	1	0.0	12.0	12.0	36
WB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	HARRISON AVE EXT	89	91	0	180	1	1	0	12.0	12.0	0.0	36

TOTAL VOLUME = 1443

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	3.0%	N	0	0	.910	300	Y	12.0	4
WB	0.0%	0.0%	N	0	0	.000	600	Y	12.0	0
NB	0.0%	0.0%	N	0	0	.000	500	Y	16.0	0
SB	0.0%	3.0%	N	0	0	.910	700	Y	16.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1				*									*	*			10.7	4	A
2				*				*				*				*	0.0	10	A
3	*	*	*														61.3	4	A

CYCLE= 90.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	404	616	243	.910	444	677	267
WB	0	0	0	.000	0	0	0
NB	0	0	0	.000	0	0	0
SB	89	91	0	.910	98	100	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT-TH	1121	2	1.05	1177	0.40	0.00
EB	RT	267	1	1.00	267	0.00	1.00
SB	LT	98	1	1.00	98	1.00	0.00
SB	TH	100	1	1.00	100	0.00	0.00

ESSEX ST/HARRISON AVE EXT

1995 NO BUILD AM PEAK WITH EXISTING NETWORK WITH MITIGATION

date: 05-07-1989 time: 17:47:59

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH	1800	2	1.000	0.985	1.000	1.000	1.000	0.900	1.000	1.000	3192
EB	RT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	0.850	1.000	1357
SB	LT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	1.000	0.950	1516
SB	TH	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	1.000	1.000	1596

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH	1177	3192	0.37	0.68	2173	0.54	*
EB	RT	267	1357	0.20	0.68	924	0.29	
SB	LT	98	1516	0.06	0.12	181	0.54	*
SB	TH	100	1596	0.06	0.12	190	0.53	

CYCLE= 90.0 LOST=18.0 SUM V/S CRIT= 0.43 TOTAL V/C= 0.54

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH	0.54	*	0.68	90.0	5.52	2173	0.12	0.62	3.49	A	8.9	26
EB	RT	0.29		0.68	90.0	4.34	924	0.00	0.62	2.69	A	2.1	7
SB	LT	0.54	*	0.12	90.0	28.37	181	1.38	1.00	29.74	D	2.2	7
SB	TH	0.53		0.12	90.0	28.31	190	0.79	0.85	24.74	C	2.2	8

DIR	STREET	DELAY	LOS
EB	ESSEX ST	3.34	A
SB	HARRISON AVE EXT	27.21	D

INTERSECTION DELAY = 6.22 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

ESSEX ST/HARRISON AVE EXT
1995 NO BUILD PM PEAK WITH EXISTING NETWORK WITH MITIGATION
Date: 05-07-1989 Time: 17:51:12

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME= GEOMETRICS= SIGNAL=

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	ESSEX ST	350	1048	358	1756	0	2	1	0.0	12.0	12.0	36
WB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	HARRISON AVE EXT	164	238	0	402	1	1	0	12.0	12.0	0.0	36

TOTAL VOLUME = 2158

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	3.0%	N	0	0	.910	300	Y	12.0	4
WB	0.0%	0.0%	N	0	0	.000	600	Y	12.0	0
NB	0.0%	0.0%	N	0	0	.000	500	Y	16.0	0
SB	0.0%	3.0%	N	0	0	.910	700	Y	16.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1				*									*	*			17.6	4	A
2				*				*				*				*	0.0	10	A
3	*	*	*														54.4	4	A

CYCLE= 90.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	350	1048	358	.910	385	1152	393
WB	0	0	0	.000	0	0	0
NB	0	0	0	.000	0	0	0
SB	164	238	0	.910	180	262	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT-TH	1536	2	1.05	1613	0.25	0.00
EB	RT	393	1	1.00	393	0.00	1.00
SB	LT	180	1	1.00	180	1.00	0.00
SB	TH	262	1	1.00	262	0.00	0.00

ESSEX ST/HARRISON AVE EXT
1995 NO BUILD PM PEAK WITH EXISTING NETWORK WITH MITIGATION
date: 05-07-1989 time: 17:51:14

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH	1800	2	1.000	0.985	1.000	1.000	1.000	0.900	1.000	1.000	3192
EB	RT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	0.850	1.000	1357
SB	LT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	1.000	0.950	1516
SB	TH	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	1.000	1.000	1596

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH	1613	3192	0.51	0.60	1928	0.84	*
EB	RT	393	1357	0.29	0.60	820	0.48	
SB	LT	180	1516	0.12	0.20	297	0.61	
SB	TH	262	1596	0.16	0.20	313	0.84	*

CYCLE= 90.0 LOST=18.0 SUM V/S CRIT= 0.67 TOTAL V/C= 0.84

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH	0.84	*	0.60	90.0	10.84	1928	2.81	0.72	9.89	B	15.2	47
EB	RT	0.48		0.60	90.0	7.55	820	0.00	0.62	4.68	A	3.9	13
SB	LT	0.61		0.20	90.0	25.10	297	2.48	1.00	27.58	D	3.6	12
SB	TH	0.84	*	0.20	90.0	26.45	313	14.50	0.85	34.81	D	5.9	19

DIR	STREET	DELAY	LOS
EB	ESSEX ST	8.87	B
SB	HARRISON AVE EXT	31.86	D

INTERSECTION DELAY = 13.02 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

ESSEX ST/HARRISON AVE EXT
1995 NO BUILD SAT PEAK WITH EXISTING NETWORK WITH MITIGATION
Date: 05-07-1989 Time: 17:53:03

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME= GEOMETRICS= SIGNAL=

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	ESSEX ST	254	719	271	1244	0	2	1	0.0	12.0	12.0	36
WB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	HARRISON AVE EXT	249	144	0	393	1	1	0	12.0	12.0	0.0	36

TOTAL VOLUME = 1637

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	3.0%	N	0	0	.910	300	Y	12.0	4
WB	0.0%	0.0%	N	0	0	.000	600	Y	12.0	0
NB	0.0%	0.0%	N	0	0	.000	500	Y	16.0	0
SB	0.0%	3.0%	N	0	0	.910	700	Y	16.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1				*									*	*			24.4	4	A
2				*				*				*				*	0.0	10	A
3	*	*	*														47.6	4	A

CYCLE= 90.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	254	719	271	.910	279	790	298
WB	0	0	0	.000	0	0	0
NB	0	0	0	.000	0	0	0
SB	249	144	0	.910	274	158	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT-TH	1069	2	1.05	1123	0.26	0.00
EB	RT	298	1	1.00	298	0.00	1.00
SB	LT	274	1	1.00	274	1.00	0.00
SB	TH	158	1	1.00	158	0.00	0.00

ESSEX ST/HARRISON AVE EXT

1995 NO BUILD SAT PEAK WITH EXISTING NETWORK WITH MITIGATION

date: 05-07-1989 time: 17:53:04

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH	1800	2	1.000	0.985	1.000	1.000	1.000	0.900	1.000	1.000	3192
EB	RT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	0.850	1.000	1357
SB	LT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	1.000	0.950	1516
SB	TH	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	1.000	1.000	1596

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH	1123	3192	0.35	0.53	1688	0.67	*
EB	RT	298	1357	0.22	0.53	717	0.42	
SB	LT	274	1516	0.18	0.27	411	0.67	*
SB	TH	158	1596	0.10	0.27	433	0.37	

CYCLE= 90.0 LOST=18.0 SUM V/S CRIT= 0.53 TOTAL V/C= 0.67

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH	0.67	*	0.53	90.0	11.72	1688	0.80	0.65	8.17	B	12.6	39
EB	RT	0.42		0.53	90.0	9.73	717	0.00	0.62	6.03	B	3.5	11
SB	LT	0.67	*	0.27	90.0	22.16	411	3.23	1.00	25.39	D	5.0	16
SB	TH	0.37		0.27	90.0	20.16	433	0.00	0.85	17.14	C	2.9	10

DIR	STREET	DELAY	LOS
EB	ESSEX ST	7.72	B
SB	HARRISON AVE EXT	22.37	C

INTERSECTION DELAY = 11.14 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

ESSEX ST/HARRISON AVE EXT
1995 BUILD AM PEAK WITH EXISTING NETWORK WITH MITIGATION
Date: 05-07-1989 Time: 17:54:31

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME= GEOMETRICS= SIGNAL=

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	ESSEX ST	769	647	300	1716	0	2	1	0.0	12.0	12.0	36
WB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	HARRISON AVE EXT	69	74	0	143	1	1	0	12.0	12.0	0.0	36

TOTAL VOLUME = 1859

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	3.0%	N	0	0	.910	300	Y	12.0	4
WB	0.0%	0.0%	N	0	0	.000	600	Y	12.0	0
NB	0.0%	0.0%	N	0	0	.000	500	Y	16.0	0
SB	0.0%	3.0%	N	0	0	.910	700	Y	16.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1				*									*	*			6.5	4	A
2				*				*				*				*	0.0	10	A
3	*	*	*														65.5	4	A

CYCLE= 90.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	769	647	300	.910	845	711	330
WB	0	0	0	.000	0	0	0
NB	0	0	0	.000	0	0	0
SB	69	74	0	.910	76	81	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT-TH	1556	2	1.05	1634	0.54	0.00
EB	RT	330	1	1.00	330	0.00	1.00
SB	LT	76	1	1.00	76	1.00	0.00
SB	TH	81	1	1.00	81	0.00	0.00

ESSEX ST/HARRISON AVE EXT

1995 BUILD AM PEAK WITH EXISTING NETWORK WITH MITIGATION

date: 05-07-1989 time: 17:54:32

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH	1800	2	1.000	0.985	1.000	1.000	1.000	0.900	1.000	1.000	3192
EB	RT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	0.850	1.000	1357
SB	LT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	1.000	0.950	1516
SB	TH	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	1.000	1.000	1596

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH	1634	3192	0.51	0.73	2323	0.70	*
EB	RT	330	1357	0.24	0.73	987	0.33	
SB	LT	76	1516	0.05	0.07	110	0.69	
SB	TH	81	1596	0.05	0.07	116	0.70	*

CYCLE= 90.0 LOST=18.0 SUM V/S CRIT= 0.56 TOTAL V/C= 0.70

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH	0.70	*	0.73	90.0	5.20	2323	0.81	0.67	4.03	A	10.6	33
EB	RT	0.33		0.73	90.0	3.35	987	0.00	0.62	2.08	A	2.2	8
SB	LT	0.69		0.07	90.0	30.97	110	13.75	1.00	44.72	E	2.1	7
SB	TH	0.70	*	0.07	90.0	31.01	116	14.41	0.85	38.60	D	2.1	7

DIR	STREET	DELAY	LOS
EB	ESSEX ST	3.70	A
SB	HARRISON AVE EXT	41.55	E

INTERSECTION DELAY = 6.51 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

ESSEX ST/HARRISON AVE EXT
1995 BUILD PM PEAK WITH EXISTING NETWORK WITH MITIGATION
Date: 05-07-1989 Time: 17:45:56

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME= GEOMETRICS= SIGNAL=

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	ESSEX ST	536	1117	459	2112	0	2	1	0.0	12.0	12.0	36
WB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	HARRISON AVE EXT	238	266	0	504	1	1	0	12.0	12.0	0.0	36

TOTAL VOLUME = 2616

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	3.0%	N	0	0	.910	300	Y	12.0	4
WB	0.0%	0.0%	N	0	0	.000	600	Y	12.0	0
NB	0.0%	0.0%	N	0	0	.000	500	Y	16.0	0
SB	0.0%	3.0%	N	0	0	.910	700	Y	16.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1				*									*	*			16.9	4	A
2				*				*				*				*	0.0	10	A
3	*	*	*														55.1	4	A

CYCLE= 90.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	536	1117	459	.910	589	1227	504
WB	0	0	0	.000	0	0	0
NB	0	0	0	.000	0	0	0
SB	238	266	0	.910	262	292	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT-TH	1816	2	1.05	1907	0.32	0.00
EB	RT	504	1	1.00	504	0.00	1.00
SB	LT	262	1	1.00	262	1.00	0.00
SB	TH	292	1	1.00	292	0.00	0.00

ESSEX ST/HARRISON AVE EXT

1995 BUILD PM PEAK WITH EXISTING NETWORK WITH MITIGATION

date: 05-07-1989 time: 17:45:57

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH	1800	2	1.000	0.985	1.000	1.000	1.000	0.900	1.000	1.000	3192
EB	RT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	0.850	1.000	1357
SB	LT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	1.000	0.950	1516
SB	TH	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	1.000	1.000	1596

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH	1907	3192	0.60	0.61	1955	0.98	*
EB	RT	504	1357	0.37	0.61	831	0.61	
SB	LT	262	1516	0.17	0.19	285	0.92	
SB	TH	292	1596	0.18	0.19	300	0.98	*

CYCLE= 90.0 LOST=18.0 SUM V/S CRIT= 0.78 TOTAL V/C= 0.98

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH	0.98	*	0.61	90.0	12.77	1955	11.65	0.77	18.85	C	21.2	64
EB	RT	0.61		0.61	90.0	8.18	831	0.90	0.62	5.67	B	4.9	16
SB	LT	0.92		0.19	90.0	27.27	285	26.08	1.00	53.35	E	7.7	24
SB	TH	0.98	*	0.19	90.0	27.63	300	35.04	0.85	53.27	E	8.6	27

DIR	STREET	DELAY	LOS
EB	ESSEX ST	16.09	C
SB	HARRISON AVE EXT	53.31	E

INTERSECTION DELAY = 23.04 INTERSECTION LOS=C

THE EXISTING TIMING IS OPTIMAL

ESSEX ST/HARRISON AVE EXT
1995 BUILD SAT PEAK WITH EXISTING NETWORK WITH MITIGATION
Date: 05-07-1989 Time: 17:59:39

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME= GEOMETRICS= SIGNAL=

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	ESSEX ST	480	804	343	1627	0	2	1	0.0	12.0	12.0	36
WB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	HARRISON AVE EXT	208	128	0	336	1	1	0	12.0	12.0	0.0	36

TOTAL VOLUME = 1963

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	3.0%	N	0	0	.910	300	Y	12.0	4
WB	0.0%	0.0%	N	0	0	.000	600	Y	12.0	0
NB	0.0%	0.0%	N	0	0	.000	500	Y	16.0	0
SB	0.0%	3.0%	N	0	0	.910	700	Y	16.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1				*									*	*			17.7	4	A
2				*			*				*					*	0.0	10	A
3	*	*	*														54.3	4	A

CYCLE= 90.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	480	804	343	.910	527	884	377
WB	0	0	0	.000	0	0	0
NB	0	0	0	.000	0	0	0
SB	208	128	0	.910	229	141	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT-TH	1411	2	1.05	1482	0.37	0.00
EB	RT	377	1	1.00	377	0.00	1.00
SB	LT	229	1	1.00	229	1.00	0.00
SB	TH	141	1	1.00	141	0.00	0.00

ESSEX ST/HARRISON AVE EXT
1995 BUILD SAT PEAK WITH EXISTING NETWORK WITH MITIGATION
date: 05-07-1989 time: 17:59:40

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH	1800	2	1.000	0.985	1.000	1.000	1.000	0.900	1.000	1.000	3192
EB	RT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	0.850	1.000	1357
SB	LT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	1.000	0.950	1516
SB	TH	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	1.000	1.000	1596

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH	1482	3192	0.46	0.60	1928	0.77	*
EB	RT	377	1357	0.28	0.60	819	0.46	
SB	LT	229	1516	0.15	0.20	297	0.77	*
SB	TH	141	1596	0.09	0.20	313	0.45	

CYCLE= 90.0 LOST=18.0 SUM V/S CRIT= 0.61 TOTAL V/C= 0.77

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH	0.77	*	0.60	90.0	10.01	1928	1.63	0.70	8.13	B	14.0	43
EB	RT	0.46		0.60	90.0	7.43	819	0.00	0.62	4.61	A	3.7	12
SB	LT	0.77	*	0.20	90.0	26.02	297	9.64	1.00	35.66	D	5.2	17
SB	TH	0.45		0.20	90.0	24.24	313	0.00	0.85	20.60	C	2.8	9

DIR	STREET	DELAY	LOS
EB	ESSEX ST	7.42	B
SB	HARRISON AVE EXT	29.93	D

INTERSECTION DELAY = 11.15 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

ESSEX ST/HARRISON AVE EXT

1995 NO BUILD AM PEAK WITH REVISED NETWORK WITH MITIGATION

Date: 05-07-1989 Time: 18:04:40

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME= GEOMETRICS= SIGNAL=

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	ESSEX ST	591	648	302	1541	0	2	1	0.0	12.0	12.0	36
WB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	HARRISON AVE EXT	41	43	0	84	1	1	0	12.0	12.0	0.0	36

TOTAL VOLUME = 1625

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	3.0%	N	0	0	.910	300	Y	12.0	4
WB	0.0%	0.0%	N	0	0	.000	600	Y	12.0	0
NB	0.0%	0.0%	N	0	0	.000	500	Y	16.0	0
SB	0.0%	3.0%	N	0	0	.910	700	Y	16.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1				*									*	*			4.5	4	A
2				*				*				*				*	0.0	10	A
3	*	*	*														67.5	4	A

CYCLE= 90.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	591	648	302	.910	649	712	332
WB	0	0	0	.000	0	0	0
NB	0	0	0	.000	0	0	0
SB	41	43	0	.910	45	47	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT-TH	1362	2	1.05	1430	0.48	0.00
EB	RT	332	1	1.00	332	0.00	1.00
SB	LT	45	1	1.00	45	1.00	0.00
SB	TH	47	1	1.00	47	0.00	0.00

ESSEX ST/HARRISON AVE EXT

1995 NO BUILD AM PEAK WITH REVISED NETWORK WITH MITIGATION

date: 05-07-1989 time: 18:04:41

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH	1800	2	1.000	0.985	1.000	1.000	1.000	0.900	1.000	1.000	3192
EB	RT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	0.850	1.000	1357
SB	LT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	1.000	0.950	1516
SB	TH	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	1.000	1.000	1596

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH	1430	3192	0.45	0.75	2395	0.60	*
EB	RT	332	1357	0.24	0.75	1018	0.33	
SB	LT	45	1516	0.03	0.05	75	0.60	*
SB	TH	47	1596	0.03	0.05	79	0.59	

CYCLE= 90.0 LOST=18.0 SUM V/S CRIT= 0.48 TOTAL V/C= 0.60

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH	0.60	*	0.75	90.0	3.86	2395	0.28	0.62	2.57	A	8.5	26
EB	RT	0.33		0.75	90.0	2.82	1018	0.00	0.62	1.75	A	2.1	7
SB	LT	0.60	*	0.05	90.0	31.83	75	8.33	1.00	40.15	E	1.2	4
SB	TH	0.59		0.05	90.0	31.82	79	7.72	0.85	33.61	D	1.1	4

DIR	STREET	DELAY	LOS
EB	ESSEX ST	2.41	A
SB	HARRISON AVE EXT	36.81	D

INTERSECTION DELAY = 4.13 INTERSECTION LOS=A

THE EXISTING TIMING IS OPTIMAL

ESSEX ST/HARRISON AVE EXT

1995 NO BUILD PM PEAK WITH REVISED NETWORK WITH MITIGATION

Date: 05-07-1989 Time: 18:06:23

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME= GEOMETRICS= SIGNAL=

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	ESSEX ST	400	1088	373	1861	0	2	1	0.0	12.0	12.0	36
WB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	HARRISON AVE EXT	91	121	0	212	1	1	0	12.0	12.0	0.0	36

TOTAL VOLUME = 2073

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	3.0%	N	0	0	.910	300	Y	12.0	4
WB	0.0%	0.0%	N	0	0	.000	600	Y	12.0	0
NB	0.0%	0.0%	N	0	0	.000	500	Y	16.0	0
SB	0.0%	3.0%	N	0	0	.910	700	Y	16.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1				*									*	*			9.7	4	A
2				*			*				*					*	0.0	10	A
3	*	*	*														62.3	4	A

CYCLE= 90.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	400	1088	373	.910	440	1196	410
WB	0	0	0	.000	0	0	0
NB	0	0	0	.000	0	0	0
SB	91	121	0	.910	100	133	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT-TH	1635	2	1.05	1717	0.27	0.00
EB	RT	410	1	1.00	410	0.00	1.00
SB	LT	100	1	1.00	100	1.00	0.00
SB	TH	133	1	1.00	133	0.00	0.00

ESSEX ST/HARRISON AVE EXT

1995 NO BUILD PM PEAK WITH REVISED NETWORK WITH MITIGATION

date: 05-07-1989 time: 18:06:24

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH	1800	2	1.000	0.985	1.000	1.000	1.000	0.900	1.000	1.000	3192
EB	RT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	0.850	1.000	1357
SB	LT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	1.000	0.950	1516
SB	TH	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	1.000	1.000	1596

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH	1717	3192	0.54	0.69	2211	0.78	*
EB	RT	410	1357	0.30	0.69	940	0.44	
SB	LT	100	1516	0.07	0.11	163	0.61	
SB	TH	133	1596	0.08	0.11	171	0.78	*

CYCLE= 90.0 LOST=18.0 SUM V/S CRIT= 0.62 TOTAL V/C= 0.78

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH	0.78	*	0.69	90.0	6.99	2211	1.52	0.70	5.97	B	12.6	39
EB	RT	0.44		0.69	90.0	4.63	940	0.00	0.62	2.87	A	3.1	10
SB	LT	0.61		0.11	90.0	29.18	163	4.89	1.00	34.06	D	2.3	8
SB	TH	0.78	*	0.11	90.0	29.73	171	16.48	0.85	39.28	D	3.4	11

DIR	STREET	DELAY	LOS
EB	ESSEX ST	5.37	B
SB	HARRISON AVE EXT	37.04	D

INTERSECTION DELAY = 8.50 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

ESSEX ST/HARRISON AVE EXT

1995 NO BUILD SAT PEAK WITH REVISED NETWORK WITH MITIGATION

Date: 05-07-1989 Time: 18:08:08

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME= GEOMETRICS= SIGNAL=

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	ESSEX ST	399	823	385	1607	0	2	1	0.0	12.0	12.0	36
WB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	HARRISON AVE EXT	113	55	0	168	1	1	0	12.0	12.0	0.0	36

TOTAL VOLUME = 1775

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	3.0%	N	0	0	.910	300	Y	12.0	4
WB	0.0%	0.0%	N	0	0	.000	600	Y	12.0	0
NB	0.0%	0.0%	N	0	0	.000	500	Y	16.0	0
SB	0.0%	3.0%	N	0	0	.910	700	Y	16.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1				*									*	*			11.3	4	A
2				*				*				*				*	0.0	10	A
3	*	*	*														60.7	4	A

CYCLE= 90.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	399	823	385	.910	438	904	423
WB	0	0	0	.000	0	0	0
NB	0	0	0	.000	0	0	0
SB	113	55	0	.910	124	60	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT-TH	1343	2	1.05	1410	0.33	0.00
EB	RT	423	1	1.00	423	0.00	1.00
SB	LT	124	1	1.00	124	1.00	0.00
SB	TH	60	1	1.00	60	0.00	0.00

ESSEX ST/HARRISON AVE EXT

1995 NO BUILD SAT PEAK WITH REVISED NETWORK WITH MITIGATION

date: 05-07-1989 time: 18:08:09

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH	1800	2	1.000	0.985	1.000	1.000	1.000	0.900	1.000	1.000	3192
EB	RT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	0.850	1.000	1357
SB	LT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	1.000	0.950	1516
SB	TH	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	1.000	1.000	1596

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH	1410	3192	0.44	0.67	2154	0.65	*
EB	RT	423	1357	0.31	0.67	916	0.46	
SB	LT	124	1516	0.08	0.13	190	0.65	*
SB	TH	60	1596	0.04	0.13	200	0.30	

CYCLE= 90.0 LOST=18.0 SUM V/S CRIT= 0.52 TOTAL V/C= 0.65

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH	0.65	*	0.67	90.0	6.48	2154	0.57	0.65	4.56	A	10.9	34
EB	RT	0.46		0.67	90.0	5.25	916	0.00	0.62	3.26	A	3.4	11
SB	LT	0.65	*	0.13	90.0	28.51	190	6.20	1.00	34.71	D	2.9	10
SB	TH	0.30		0.13	90.0	27.21	200	0.00	0.85	23.13	C	1.3	5

DIR	STREET	DELAY	LOS
EB	ESSEX ST	4.26	A
SB	HARRISON AVE EXT	30.92	D

INTERSECTION DELAY = 6.70 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

ESSEX ST/HARRISON AVE EXT
1995 BUILD AM PEAK WITH REVISED NETWORK WITH MITIGATION
Date: 05-07-1989 Time: 18:10:40

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME= GEOMETRICS= SIGNAL=

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	ESSEX ST	768	648	302	1718	0	2	1	0.0	12.0	12.0	36
WB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	HARRISON AVE EXT	68	70	0	138	1	1	0	12.0	12.0	0.0	36

TOTAL VOLUME = 1856

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	3.0%	N	0	0	.910	300	Y	12.0	4
WB	0.0%	0.0%	N	0	0	.000	600	Y	12.0	0
NB	0.0%	0.0%	N	0	0	.000	500	Y	16.0	0
SB	0.0%	3.0%	N	0	0	.910	700	Y	16.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1				*									*	*			6.3	4	A
2				*				*				*				*	0.0	10	A
3	*	*	*														65.7	4	A

CYCLE= 90.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	768	648	302	.910	844	712	332
WB	0	0	0	.000	0	0	0
NB	0	0	0	.000	0	0	0
SB	68	70	0	.910	75	77	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT-TH	1556	2	1.05	1634	0.54	0.00
EB	RT	332	1	1.00	332	0.00	1.00
SB	LT	75	1	1.00	75	1.00	0.00
SB	TH	77	1	1.00	77	0.00	0.00

ESSEX ST/HARRISON AVE EXT
1995 BUILD AM PEAK WITH REVISED NETWORK WITH MITIGATION
date: 05-07-1989 time: 18:10:41

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH	1800	2	1.000	0.985	1.000	1.000	1.000	0.900	1.000	1.000	3192
EB	RT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	0.850	1.000	1357
SB	LT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	1.000	0.950	1516
SB	TH	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	1.000	1.000	1596

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH	1634	3192	0.51	0.73	2329	0.70	*
EB	RT	332	1357	0.24	0.73	990	0.34	
SB	LT	75	1516	0.05	0.07	107	0.70	*
SB	TH	77	1596	0.05	0.07	112	0.69	

CYCLE= 90.0 LOST=18.0 SUM V/S CRIT= 0.56 TOTAL V/C= 0.70

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH	0.70	*	0.73	90.0	5.12	2329	0.80	0.67	3.96	A	10.5	32
EB	RT	0.34		0.73	90.0	3.31	990	0.00	0.62	2.05	A	2.2	8
SB	LT	0.70	*	0.07	90.0	31.10	107	15.27	1.00	46.36	E	2.1	7
SB	TH	0.69		0.07	90.0	31.06	112	13.05	0.85	37.49	D	1.9	7

DIR	STREET	DELAY	LOS
EB	ESSEX ST	3.64	A
SB	HARRISON AVE EXT	41.86	E

INTERSECTION DELAY = 6.37 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

ESSEX ST/HARRISON AVE EXT

1995 BUILD PM PEAK WITH REVISED NETWORK WITH MITIGATION

Date: 05-07-1989 Time: 18:12:06

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME= GEOMETRICS= SIGNAL=

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	ESSEX ST	498	1088	373	1959	0	2	1	0.0	12.0	12.0	36
WB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	HARRISON AVE EXT	241	270	0	511	1	1	0	12.0	12.0	0.0	36

TOTAL VOLUME = 2470

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	3.0%	N	0	0	.910	300	Y	12.0	4
WB	0.0%	0.0%	N	0	0	.000	600	Y	12.0	0
NB	0.0%	0.0%	N	0	0	.000	500	Y	16.0	0
SB	0.0%	3.0%	N	0	0	.910	700	Y	16.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1				*									*	*			17.6	4	A
2				*				*				*				*	0.0	10	A
3	*	*	*														54.4	4	A

CYCLE= 90.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	498	1088	373	.910	547	1196	410
WB	0	0	0	.000	0	0	0
NB	0	0	0	.000	0	0	0
SB	241	270	0	.910	265	297	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT-TH	1743	2	1.05	1830	0.31	0.00
EB	RT	410	1	1.00	410	0.00	1.00
SB	LT	265	1	1.00	265	1.00	0.00
SB	TH	297	1	1.00	297	0.00	0.00

ESSEX ST/HARRISON AVE EXT
1995 BUILD PM PEAK WITH REVISED NETWORK WITH MITIGATION
date: 05-07-1989 time: 18:12:07

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH	1800	2	1.000	0.985	1.000	1.000	1.000	0.900	1.000	1.000	3192
EB	RT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	0.850	1.000	1357
SB	LT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	1.000	0.950	1516
SB	TH	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	1.000	1.000	1596

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH	1830	3192	0.57	0.60	1928	0.95	*
EB	RT	410	1357	0.30	0.60	820	0.50	
SB	LT	265	1516	0.17	0.20	297	0.89	
SB	TH	297	1596	0.19	0.20	313	0.95	*

CYCLE= 90.0 LOST=18.0 SUM V/S CRIT= 0.76 TOTAL V/C= 0.95

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH	0.95	*	0.60	90.0	12.56	1928	8.52	0.76	16.10	C	18.8	57
EB	RT	0.50		0.60	90.0	7.68	820	0.00	0.62	4.76	A	4.1	13
SB	LT	0.89		0.20	90.0	26.79	297	21.43	1.00	48.22	E	7.3	23
SB	TH	0.95	*	0.20	90.0	27.16	313	29.29	0.85	47.99	E	8.1	25

DIR	STREET	DELAY	LOS
EB	ESSEX ST	14.02	B
SB	HARRISON AVE EXT	48.10	E

INTERSECTION DELAY = 20.85 INTERSECTION LOS=C

THE EXISTING TIMING IS OPTIMAL

ESSEX ST/HARRISON AVE EXT

1995 BUILD SAT PEAK WITH REVISED NETWORK WITH MITIGATION

Date: 05-07-1989 Time: 18:13:09

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME= GEOMETRICS= SIGNAL=

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	ESSEX ST	506	823	385	1714	0	2	1	0.0	12.0	12.0	36
WB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	HARRISON AVE EXT	186	128	0	314	1	1	0	12.0	12.0	0.0	36

TOTAL VOLUME = 2028

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	3.0%	N	0	0	.910	300	Y	12.0	4
WB	0.0%	0.0%	N	0	0	.000	600	Y	12.0	0
NB	0.0%	0.0%	N	0	0	.000	500	Y	16.0	0
SB	0.0%	3.0%	N	0	0	.910	700	Y	16.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1				*									*	*			15.8	4	A
2				*				*				*				*	0.0	10	A
3	*	*	*														56.2	4	A

CYCLE= 90.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	506	823	385	.910	556	904	423
WB	0	0	0	.000	0	0	0
NB	0	0	0	.000	0	0	0
SB	186	128	0	.910	204	141	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT-TH	1460	2	1.05	1533	0.38	0.00
EB	RT	423	1	1.00	423	0.00	1.00
SB	LT	204	1	1.00	204	1.00	0.00
SB	TH	141	1	1.00	141	0.00	0.00

ESSEX ST/HARRISON AVE EXT
1995 BUILD SAT PEAK WITH REVISED NETWORK WITH MITIGATION
date: 05-07-1989 time: 18:13:10

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH	1800	2	1.000	0.985	1.000	1.000	1.000	0.900	1.000	1.000	3192
EB	RT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	0.850	1.000	1357
SB	LT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	1.000	0.950	1516
SB	TH	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	1.000	1.000	1596

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH	1533	3192	0.48	0.62	1994	0.77	*
EB	RT	423	1357	0.31	0.62	848	0.50	
SB	LT	204	1516	0.13	0.18	266	0.77	*
SB	TH	141	1596	0.09	0.18	280	0.50	

CYCLE= 90.0 LOST=18.0 SUM V/S CRIT= 0.62 TOTAL V/C= 0.77

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH	0.77	*	0.62	90.0	9.27	1994	1.58	0.70	7.58	B	13.7	42
EB	RT	0.50		0.62	90.0	7.00	848	0.00	0.62	4.34	A	4.0	13
SB	LT	0.77	*	0.18	90.0	26.88	266	10.70	1.00	37.58	D	4.9	16
SB	TH	0.50		0.18	90.0	25.51	280	0.05	0.85	21.73	C	2.9	10

DIR	STREET	DELAY	LOS
EB	ESSEX ST	6.88	B
SB	HARRISON AVE EXT	31.12	D

INTERSECTION DELAY = 10.51 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

KINGSTON ST/AVE DE LAFAYETTE/ESSEX ST
1995 NO BUILD AM PEAK WITH EXISTING NETWORK
Date: 05-08-1989 Time: 07:31:44

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=18AM GEOMETRICS=18AM SIGNAL=18AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	ESSEX ST	0	646	36	682	0	2	1	0.0	12.0	10.0	60
WB	ESSEX ST	0	0	0	0	0	0	0	0.0	0.0	0.0	60
NB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	56
SB	KINGSTON ST	272	104	35	411	0	2	0	0.0	12.0	0.0	30

TOTAL VOLUME = 1093

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.870	300	Y	18.0	4
WB	0.0%	2.0%	N	10	10	.000	200	Y	18.0	3
NB	0.0%	0.0%	N	0	0	.000	90	Y	17.0	3
SB	0.0%	2.0%	N	0	10	.870	380	Y	17.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1				*				*					*	*	*		36.3	4	A
2		*	*									*				*	45.7	4	A

CYCLE= 90.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	646	36	.870	0	743	41
WB	0	0	0	.000	0	0	0
NB	0	0	0	.000	0	0	0
SB	272	104	35	.870	313	120	40

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	TH	743	2	1.05	780	0.00	0.00
EB	RT	41	1	1.00	41	0.00	1.00
SB	LT-TH-RT	472	2	1.05	496	0.66	0.09

KINGSTON ST/AVE DE LAFAYETTE/ESSEX ST
1995 NO BUILD AM PEAK WITH EXISTING NETWORK
date: 05-08-1989 time: 07:31:45

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH	1800	2	1.000	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3208
EB	RT	1800	1	0.933	0.990	1.000	1.000	0.958	0.900	0.807	1.000	1158
SB	LT-TH-RT	1800	2	1.000	0.990	1.000	1.000	0.979	0.900	0.975	0.838	2566

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH	780	3208	0.24	0.51	1628	0.48	*
EB	RT	41	1158	0.04	0.51	588	0.07	
SB	LT-TH-RT	496	2566	0.19	0.40	1036	0.48	*

CYCLE= 90.0 LOST= 8.0 SUM V/S CRIT= 0.44 TOTAL V/C= 0.48

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH	0.48	*	0.51	90.0	10.96	1628	0.00	0.62	6.80	B	9.1	28
EB	RT	0.07		0.51	90.0	8.60	588	0.00	0.62	5.33	B	0.5	2
SB	LT-TH-RT	0.48	*	0.40	90.0	15.08	1036	0.00	0.85	12.82	B	7.0	22

DIR	STREET	DELAY	LOS
EB	ESSEX ST	6.72	B
SB	KINGSTON ST	12.82	B

INTERSECTION DELAY = 9.02 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

KINGSTON ST/AVE DE LAFAYETTE/ESSEX ST
1995 NO BUILD PM PEAK WITH EXISTING NETWORK
Date: 05-08-1989 Time: 07:34:47

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=18AM GEOMETRICS=18AM SIGNAL=18AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	ESSEX ST	0	1046	129	1175	0	2	1	0.0	12.0	10.0	60
WB	ESSEX ST	0	0	0	0	0	0	0	0.0	0.0	0.0	60
NB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	56
SB	KINGSTON ST	470	345	94	909	0	2	0	0.0	12.0	0.0	30

TOTAL VOLUME = 2084

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.870	300	Y	18.0	4
WB	0.0%	2.0%	N	10	10	.000	200	Y	18.0	3
NB	0.0%	0.0%	N	0	0	.000	90	Y	17.0	3
SB	0.0%	2.0%	N	0	10	.870	380	Y	17.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1				*				*					*	*	*		42.0	4	A
2		*	*									*				*	40.0	4	A

CYCLE= 90.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	1046	129	.870	0	1202	148
WB	0	0	0	.000	0	0	0
NB	0	0	0	.000	0	0	0
SB	470	345	94	.870	540	397	108

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	TH	1202	2	1.05	1262	0.00	0.00
EB	RT	148	1	1.00	148	0.00	1.00
SB	LT-TH-RT	1045	2	1.05	1097	0.52	0.10

KINGSTON ST/AVE DE LAFAYETTE/ESSEX ST
1995 NO BUILD PM PEAK WITH EXISTING NETWORK
date: 05-08-1989 time: 07:34:48

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH	1800	2	1.000	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3208
EB	RT	1800	1	0.933	0.990	1.000	1.000	0.958	0.900	0.807	1.000	1158
SB	LT-TH-RT	1800	2	1.000	0.990	1.000	1.000	0.979	0.900	0.970	0.873	2660

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH	1262	3208	0.39	0.44	1427	0.88	*
EB	RT	148	1158	0.13	0.44	515	0.29	
SB	LT-TH-RT	1097	2660	0.41	0.47	1240	0.88	*

CYCLE= 90.0 LOST= 8.0 SUM V/S CRIT= 0.81 TOTAL V/C= 0.88

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH	0.88	*	0.44	90.0	17.38	1427	5.66	0.74	17.10	C	16.7	51
EB	RT	0.29		0.44	90.0	12.09	515	0.00	0.62	7.49	B	2.1	7
SB	LT-TH-RT	0.88	*	0.47	90.0	16.58	1240	6.41	0.85	19.55	C	14.3	44

DIR	STREET	DELAY	LOS
EB	ESSEX ST	16.09	C
SB	KINGSTON ST	19.55	C

INTERSECTION DELAY = 17.60 INTERSECTION LOS=C

THE EXISTING TIMING IS OPTIMAL

KINGSTON ST/AVE DE LAFAYETTE/ESSEX ST
1995 BUILD AM PEAK WITH EXISTING NETWORK
Date: 05-08-1989 Time: 07:30:17

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=18AM GEOMETRICS=18AM SIGNAL=18AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	ESSEX ST	0	673	36	709	0	2	1	0.0	12.0	10.0	60
WB	ESSEX ST	0	0	0	0	0	0	0	0.0	0.0	0.0	60
NB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	56
SB	KINGSTON ST	301	104	35	440	0	2	0	0.0	12.0	0.0	30

TOTAL VOLUME = 1149

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.870	300	Y	18.0	4
WB	0.0%	2.0%	N	40	10	.000	200	Y	18.0	3
NB	0.0%	0.0%	N	0	0	.000	90	Y	17.0	3
SB	0.0%	2.0%	N	0	10	.870	380	Y	17.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1				*				*					*	*	*		37.0	4	A
2		*	*									*				*	45.0	4	A

CYCLE= 90.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	673	36	.870	0	774	41
WB	0	0	0	.000	0	0	0
NB	0	0	0	.000	0	0	0
SB	301	104	35	.870	346	120	40

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	TH	774	2	1.05	812	0.00	0.00
EB	RT	41	1	1.00	41	0.00	1.00
SB	LT-TH-RT	506	2	1.05	531	0.68	0.08

KINGSTON ST/AVE DE LAFAYETTE/ESSEX ST
1995 BUILD AM PEAK WITH EXISTING NETWORK
date: 05-08-1989 time: 07:30:18

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH	1800	2	1.000	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3208
EB	RT	1800	1	0.933	0.990	1.000	1.000	0.958	0.900	0.807	1.000	1158
SB	LT-TH-RT	1800	2	1.000	0.990	1.000	1.000	0.979	0.900	0.977	0.832	2553

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH	812	3208	0.25	0.50	1605	0.51	*
EB	RT	41	1158	0.04	0.50	579	0.07	
SB	LT-TH-RT	531	2553	0.21	0.41	1049	0.51	*

CYCLE= 90.0 LOST= 8.0 SUM V/S CRIT= 0.46 TOTAL V/C= 0.51

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH	0.51	*	0.50	90.0	11.44	1605	0.02	0.62	7.11	B	9.7	30
EB	RT	0.07		0.50	90.0	8.86	579	0.00	0.62	5.49	B	0.5	2
SB	LT-TH-RT	0.51	*	0.41	90.0	14.99	1049	0.03	0.85	12.77	B	7.4	23

DIR	STREET	DELAY	LOS
EB	ESSEX ST	7.03	B
SB	KINGSTON ST	12.77	B

INTERSECTION DELAY = 9.23 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

KINGSTON ST/AVE DE LAFAYETTE/ESSEX ST
1995 BUILD PM PEAK WITH EXISTING NETWORK
Date: 05-08-1989 Time: 07:28:07

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=18AM GEOMETRICS=18AM SIGNAL=18AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	ESSEX ST	0	1195	129	1324	0	2	1	0.0	12.0	10.0	60
WB	ESSEX ST	0	0	0	0	0	0	0	0.0	0.0	0.0	60
NB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	56
SB	KINGSTON ST	626	345	94	1065	0	2	0	0.0	12.0	0.0	30

TOTAL VOLUME = 2389

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.870	300	Y	18.0	4
WB	0.0%	2.0%	N	10	10	.000	200	Y	18.0	3
NB	0.0%	0.0%	N	0	0	.000	90	Y	17.0	3
SB	0.0%	2.0%	N	0	10	.870	380	Y	17.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1				*				*					*	*	*		42.8	4	A
2		*	*									*				*	39.2	4	A

CYCLE= 90.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	1195	129	.870	0	1374	148
WB	0	0	0	.000	0	0	0
NB	0	0	0	.000	0	0	0
SB	626	345	94	.870	720	397	108

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	TH	1374	2	1.05	1442	0.00	0.00
EB	RT	148	1	1.00	148	0.00	1.00
SB	LT-TH-RT	1224	2	1.05	1285	0.59	0.09

KINGSTON ST/AVE DE LAFAYETTE/ESSEX ST
1995 BUILD PM PEAK WITH EXISTING NETWORK
date: 05-08-1989 time: 07:28:08

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH	1800	2	1.000	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3208
EB	RT	1800	1	0.933	0.990	1.000	1.000	0.958	0.900	0.807	1.000	1158
SB	LT-TH-RT	1800	2	1.000	0.990	1.000	1.000	0.979	0.900	0.974	0.856	2619

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH	1442	3208	0.45	0.44	1397	1.03	*
EB	RT	148	1158	0.13	0.44	504	0.29	
SB	LT-TH-RT	1285	2619	0.49	0.48	1245	1.03	*

CYCLE= 90.0 LOST= 8.0 SUM V/S CRIT= 0.94 TOTAL V/C= 1.03

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH	1.03	*	0.44	90.0	19.79	1397	25.45	0.79	35.70	D	27.4	83
EB	RT	0.29		0.44	90.0	12.49	504	0.00	0.62	7.75	B	2.1	7
SB	LT-TH-RT	1.03	*	0.48	90.0	18.48	1245	26.54	0.85	38.26	D	24.9	76

DIR	STREET	DELAY	LOS
EB	ESSEX ST	33.09	D
SB	KINGSTON ST	38.26	D

INTERSECTION DELAY = 35.40 INTERSECTION LOS=D

THE EXISTING TIMING IS OPTIMAL

KINGSTON ST/AVE DE LAFAYETTE/ESSEX ST
1995 NO BUILD AM PEAK WITH REVISED NETWORK
Date: 05-08-1989 Time: 07:24:56

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=18AM GEOMETRICS=18AM SIGNAL=18AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	ESSEX ST	0	646	36	682	0	2	1	0.0	12.0	10.0	60
WB	ESSEX ST	0	296	0	296	0	2	0	0.0	12.0	0.0	60
NB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	56
SB	KINGSTON ST	272	104	35	411	0	2	0	0.0	12.0	0.0	30

TOTAL VOLUME = 1389

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.870	300	Y	18.0	4
WB	0.0%	2.0%	N	10	10	.870	200	Y	18.0	3
NB	0.0%	0.0%	N	0	0	.000	90	Y	17.0	3
SB	0.0%	2.0%	N	0	10	.870	380	Y	17.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1				*				*					*	*	*		36.3	4	A
2		*	*			*						*				*	45.7	4	A

CYCLE= 90.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	646	36	.870	0	743	41
WB	0	296	0	.870	0	340	0
NB	0	0	0	.000	0	0	0
SB	272	104	35	.870	313	120	40

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	TH	743	2	1.05	780	0.00	0.00
EB	RT	41	1	1.00	41	0.00	1.00
WB	TH	340	2	1.05	357	0.00	0.00
SB	LT-TH-RT	472	2	1.05	496	0.66	0.09

KINGSTON ST/AVE DE LAFAYETTE/ESSEX ST
1995 NO BUILD AM PEAK WITH REVISED NETWORK
date: 05-08-1989 time: 07:24:57

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH	1800	2	1.000	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3208
EB	RT	1800	1	0.933	0.990	1.000	1.000	0.958	0.900	0.807	1.000	1158
WB	TH	1800	2	1.000	0.990	1.000	1.000	0.979	0.900	1.000	1.000	3141
SB	LT-TH-RT	1800	2	1.000	0.990	1.000	1.000	0.979	0.900	0.975	0.838	2566

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH	780	3208	0.24	0.51	1628	0.48	*
EB	RT	41	1158	0.04	0.51	588	0.07	
WB	TH	357	3141	0.11	0.51	1594	0.22	
SB	LT-TH-RT	496	2566	0.19	0.40	1036	0.48	*

CYCLE= 90.0 LOST= 8.0 SUM V/S CRIT= 0.44 TOTAL V/C= 0.48

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH	0.48	*	0.51	90.0	10.96	1628	0.00	0.62	6.80	B	9.1	28
EB	RT	0.07		0.51	90.0	8.60	588	0.00	0.62	5.33	B	0.5	2
WB	TH	0.22		0.51	90.0	9.36	1594	0.00	0.85	7.96	B	4.2	13
SB	LT-TH-RT	0.48	*	0.40	90.0	15.08	1036	0.00	0.85	12.82	B	7.0	22

DIR	STREET	DELAY	LOS
EB	ESSEX ST	6.72	B
WB	ESSEX ST	7.96	B
SB	KINGSTON ST	12.82	B

INTERSECTION DELAY = 8.79 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

KINGSTON ST/AVE DE LAFAYETTE/ESSEX ST
1995 NO BUILD PM PEAK WITH REVISED NETWORK
Date: 05-08-1989 Time: 07:23:27

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=18AM GEOMETRICS=18AM SIGNAL=18AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

DIR	STREET	VOLUMES LT	TH	RT	TOTAL	# OF LANES LT	TH	RT	LANE WIDTH LT	TH	RT	CROSS WALK
EB	ESSEX ST	0	1037	121	1158	0	2	1	0.0	12.0	10.0	60
WB	ESSEX ST	0	235	0	235	0	2	0	0.0	12.0	0.0	60
NB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	56
SB	KINGSTON ST	470	345	94	909	0	2	0	0.0	12.0	0.0	30

TOTAL VOLUME = 2302

TRAFFIC & ROADWAY CONDITIONS

DIR	GRADE	%HV	ADJ PARK Y/N	MOVES	BUSES	PHF	PEDESTRIANS CROSS	BUT	MIN TIME	ARR TYPE
EB	0.0%	2.0%	N	0	10	.870	300	Y	18.0	4
WB	0.0%	2.0%	N	10	10	.870	200	Y	18.0	3
NB	0.0%	0.0%	N	0	0	.000	90	Y	17.0	3
SB	0.0%	2.0%	N	0	10	.870	380	Y	17.0	3

PHASINGS

	EASTBOUND l	t	r	p	WESTBOUND l	t	r	p	NORTHBOUND l	t	r	p	SOUTHBOUND l	t	r	p	GREEN	Y+R	PRE/ACT
1				*				*					*	*	*		42.1	4	A
2		*	*			*						*				*	39.9	4	A

CYCLE= 90.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	1037	121	.870	0	1192	139
WB	0	235	0	.870	0	270	0
NB	0	0	0	.000	0	0	0
SB	470	345	94	.870	540	397	108

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	y	Plt	Prt
EB	TH	1192	2	1.05	1252	0.00	0.00
EB	RT	139	1	1.00	139	0.00	1.00
WB	TH	270	2	1.05	284	0.00	0.00
SB	LT-TH-RT	1045	2	1.05	1097	0.52	0.10

KINGSTON ST/AVE DE LAFAYETTE/ESSEX ST
1995 NO BUILD PM PEAK WITH REVISED NETWORK
date: 05-08-1989 time: 07:23:28

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH	1800	2	1.000	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3208
EB	RT	1800	1	0.933	0.990	1.000	1.000	0.958	0.900	0.807	1.000	1158
WB	TH	1800	2	1.000	0.990	1.000	1.000	0.979	0.900	1.000	1.000	3141
SB	LT-TH-RT	1800	2	1.000	0.990	1.000	1.000	0.979	0.900	0.970	0.873	2660

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH	1252	3208	0.39	0.44	1421	0.88	*
EB	RT	139	1158	0.12	0.44	513	0.27	
WB	TH	284	3141	0.09	0.44	1391	0.20	
SB	LT-TH-RT	1097	2660	0.41	0.47	1245	0.88	*

CYCLE= 90.0 LOST= 8.0 SUM V/S CRIT= 0.80 TOTAL V/C= 0.88

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH	0.88	*	0.44	90.0	17.41	1421	5.50	0.74	16.97	C	16.6	51
EB	RT	0.27		0.44	90.0	12.06	513	0.00	0.62	7.48	B	1.9	7
WB	TH	0.20		0.44	90.0	11.67	1391	0.00	0.85	9.92	B	3.8	12
SB	LT-TH-RT	0.88	*	0.47	90.0	16.46	1245	6.18	0.85	19.25	C	14.2	44

DIR	STREET	DELAY	LOS
EB	ESSEX ST	16.02	C
WB	ESSEX ST	9.92	B
SB	KINGSTON ST	19.25	C

INTERSECTION DELAY = 16.67 INTERSECTION LOS=C

THE EXISTING TIMING IS OPTIMAL

KINGSTON ST/AVE DE LAFAYETTE/ESSEX ST
1995 BUILD AM PEAK WITH REVISED NETWORK
Date: 05-08-1989 Time: 07:21:57

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=18AM GEOMETRICS=18AM SIGNAL=18AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	ESSEX ST	0	674	36	710	0	2	1	0.0	12.0	10.0	60
WB	ESSEX ST	0	510	0	510	0	2	0	0.0	12.0	0.0	60
NB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	56
SB	KINGSTON ST	301	104	35	440	0	2	0	0.0	12.0	0.0	30

TOTAL VOLUME = 1660

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.870	300	Y	18.0	4
WB	0.0%	2.0%	N	10	10	.870	200	Y	18.0	3
NB	0.0%	0.0%	N	0	0	.000	90	Y	17.0	3
SB	0.0%	2.0%	N	0	10	.870	380	Y	17.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1				*				*					*	*	*		37.0	4	A
2		*	*			*						*				*	45.0	4	A

CYCLE= 90.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	674	36	.870	0	775	41
WB	0	510	0	.870	0	586	0
NB	0	0	0	.000	0	0	0
SB	301	104	35	.870	346	120	40

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	TH	775	2	1.05	813	0.00	0.00
EB	RT	41	1	1.00	41	0.00	1.00
WB	TH	586	2	1.05	616	0.00	0.00
SB	LT-TH-RT	506	2	1.05	531	0.68	0.08

KINGSTON ST/AVE DE LAFAYETTE/ESSEX ST
1995 BUILD AM PEAK WITH REVISED NETWORK
date: 05-08-1989 time: 07:21:58

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH	1800	2	1.000	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3208
EB	RT	1800	1	0.933	0.990	1.000	1.000	0.958	0.900	0.807	1.000	1158
WB	TH	1800	2	1.000	0.990	1.000	1.000	0.979	0.900	1.000	1.000	3141
SB	LT-TH-RT	1800	2	1.000	0.990	1.000	1.000	0.979	0.900	0.977	0.832	2553

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH	813	3208	0.25	0.50	1606	0.51	*
EB	RT	41	1158	0.04	0.50	580	0.07	
WB	TH	616	3141	0.20	0.50	1572	0.39	
SB	LT-TH-RT	531	2553	0.21	0.41	1048	0.51	*

CYCLE= 90.0 LOST= 8.0 SUM V/S CRIT= 0.46 TOTAL V/C= 0.51

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH	0.51	*	0.50	90.0	11.43	1606	0.02	0.62	7.10	B	9.7	30
EB	RT	0.07		0.50	90.0	8.85	580	0.00	0.62	5.49	B	0.5	2
WB	TH	0.39		0.50	90.0	10.61	1572	0.00	0.85	9.02	B	7.3	23
SB	LT-TH-RT	0.51	*	0.41	90.0	15.00	1048	0.04	0.85	12.78	B	7.5	23

DIR	STREET	DELAY	LOS
EB	ESSEX ST	7.02	B
WB	ESSEX ST	9.02	B
SB	KINGSTON ST	12.78	B

INTERSECTION DELAY = 9.16 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

KINGSTON ST/AVE DE LAFAYETTE/ESSEX ST
1995 BUILD PM PEAK WITH REVISED NETWORK
Date: 05-08-1989 Time: 07:17:54

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=18AM GEOMETRICS=18AM SIGNAL=18AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	ESSEX ST	0	1187	121	1308	0	2	1	0.0	12.0	10.0	60
WB	ESSEX ST	0	353	0	353	0	2	0	0.0	12.0	0.0	60
NB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	56
SB	KINGSTON ST	626	345	94	1065	0	2	0	0.0	12.0	0.0	30

TOTAL VOLUME = 2726

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.870	300	Y	18.0	4
WB	0.0%	2.0%	N	10	10	.870	200	Y	18.0	3
NB	0.0%	0.0%	N	0	0	.000	90	Y	17.0	3
SB	0.0%	2.0%	N	0	10	.870	380	Y	17.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1				*				*					*	*	*		42.9	4	A
2		*	*			*						*				*	39.1	4	A

CYCLE= 90.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	1187	121	.870	0	1364	139
WB	0	353	0	.870	0	406	0
NB	0	0	0	.000	0	0	0
SB	626	345	94	.870	720	397	108

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	TH	1364	2	1.05	1433	0.00	0.00
EB	RT	139	1	1.00	139	0.00	1.00
WB	TH	406	2	1.05	426	0.00	0.00
SB	LT-TH-RT	1224	2	1.05	1285	0.59	0.09

KINGSTON ST/AVE DE LAFAYETTE/ESSEX ST
1995 BUILD PM PEAK WITH REVISED NETWORK
date: 05-08-1989 time: 07:17:55

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH	1800	2	1.000	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3208
EB	RT	1800	1	0.933	0.990	1.000	1.000	0.958	0.900	0.807	1.000	1158
WB	TH	1800	2	1.000	0.990	1.000	1.000	0.979	0.900	1.000	1.000	3141
SB	LT-TH-RT	1800	2	1.000	0.990	1.000	1.000	0.979	0.900	0.974	0.856	2619

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH	1433	3208	0.45	0.43	1392	1.03	*
EB	RT	139	1158	0.12	0.43	503	0.28	
WB	TH	426	3141	0.14	0.43	1363	0.31	
SB	LT-TH-RT	1285	2619	0.49	0.48	1249	1.03	*

CYCLE= 90.0 LOST= 8.0 SUM V/S CRIT= 0.94 TOTAL V/C= 1.03

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH	1.03	*	0.43	90.0	19.79	1392	24.70	0.79	35.06	D	26.9	82
EB	RT	0.28		0.43	90.0	12.45	503	0.00	0.62	7.72	B	2.0	7
WB	TH	0.31		0.43	90.0	12.67	1363	0.00	0.85	10.77	B	5.7	18
SB	LT-TH-RT	1.03	*	0.48	90.0	18.37	1249	25.73	0.85	37.49	D	24.6	75

DIR	STREET	DELAY	LOS
EB	ESSEX ST	32.64	D
WB	ESSEX ST	10.77	B
SB	KINGSTON ST	37.49	D

INTERSECTION DELAY = 31.70 INTERSECTION LOS=D

THE EXISTING TIMING IS OPTIMAL

SURFACE ARTERY/LINCOLN ST/ESSEX ST
1995 NO BUILD AM PEAK WITH EXISTING NETWORK
Date: 05-08-1988 Time: 09:48:47

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=21PM GEOMETRICS=21PM SIGNAL=21PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	ESSEX ST	131	641	88	840	0	3	0	0.0	12.0	0.0	52
WB	LINCOLN ST	72	1368	33	1473	1	3	0	12.0	12.0	0.0	30
NB	SURFACE ARTERY	0	522	19	541	0	2	0	0.0	12.0	0.0	56
SB	SURFACE ARTERY	0	883	79	962	0	4	0	0.0	12.0	0.0	66

TOTAL VOLUME = 3818

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.940	15	Y	20.0	3
WB	0.0%	2.0%	N	10	10	.940	180	Y	20.0	3
NB	0.0%	2.0%	N	0	20	.940	100	Y	23.5	3
SB	0.0%	2.0%	N	0	25	.940	310	Y	23.5	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*	*	*														27.3	4	A
2									*	*	*		*	*	*		25.7	4	A
3					*	*	*										45.1	4	A
4				*				*				*				*	0.0	10	A

CYCLE= 120.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	131	641	88	.940	139	682	72
WB	72	1368	33	.940	77	1455	35
NB	0	522	19	.940	0	555	20
SB	0	883	79	.940	0	939	84

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
EB	LT-TH-RT	894	3	1.10	983	0.18	0.08
WB	LT	77	1	1.00	77	1.00	0.00
WB	TH-RT	1490	3	1.10	1639	0.00	0.02
NB	TH-RT	576	2	1.05	604	0.00	0.04
SB	TH-RT	1023	4	1.10	1128	0.00	0.08

SURFACE ARTERY/LINCOLN ST/ESSEX ST
1995 NO BUILD AM PEAK WITH EXISTING NETWORK
date: 05-08-1989 time: 09:48:48

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH-RT	1800	3	1.000	0.990	1.000	1.000	0.986	0.900	0.988	1.000	4687
WB	LT	1800	1	1.000	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1524
WB	TH-RT	1800	3	1.000	0.990	1.000	1.000	0.986	0.900	0.996	1.000	4728
NB	TH-RT	1800	2	1.000	0.990	1.000	1.000	0.958	0.900	0.995	1.000	3058
SB	TH-RT	1800	4	1.000	0.990	1.000	1.000	0.974	0.900	0.988	1.000	6172

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH-RT	983	4687	0.21	0.23	1065	0.92	*
WB	LT	77	1524	0.05	0.38	572	0.13	
WB	TH-RT	1639	4728	0.35	0.38	1776	0.92	*
NB	TH-RT	804	3058	0.20	0.21	654	0.92	*
SB	TH-RT	1126	6172	0.18	0.21	1321	0.85	

CYCLE=120.0 LOST=22.0 SUM V/S CRIT= 0.75 TOTAL V/C= 0.92

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH-RT	0.92	*	0.23	120.0	34.47	1065	10.33	0.85	38.08	D	23.8	72
WB	LT	0.13		0.38	120.0	18.72	572	0.00	1.00	18.72	C	1.6	6
WB	TH-RT	0.92	*	0.38	120.0	27.22	1776	6.84	0.85	28.95	D	31.1	94
NB	TH-RT	0.92	*	0.21	120.0	35.11	654	14.94	0.85	42.54	E	16.4	50
SB	TH-RT	0.85		0.21	120.0	34.45	1321	4.59	0.85	33.18	D	26.8	81

DIR	STREET	DELAY	LOS
EB	ESSEX ST	38.08	D
WB	LINCOLN ST	28.50	D
NB	SURFACE ARTERY	42.54	E
SB	SURFACE ARTERY	33.18	D

INTERSECTION DELAY = 33.73 INTERSECTION LOS=D

THE EXISTING TIMING IS OPTIMAL

SURFACE ARTERY/LINCOLN ST/ESSEX ST
1995 NO BUILD PM PEAK WITH EXISTING NETWORK
Date: 05-08-1989 Time: 09:50:54

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=21PM GEOMETRICS=21PM SIGNAL=21PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	ESSEX ST	153	878	193	1224	0	3	0	0.0	12.0	0.0	52
WB	LINCOLN ST	35	533	12	580	1	3	0	12.0	12.0	0.0	30
NB	SURFACE ARTERY	0	713	13	726	0	2	0	0.0	12.0	0.0	56
SB	SURFACE ARTERY	0	1376	21	1397	0	4	0	0.0	12.0	0.0	66

TOTAL VOLUME = 3927

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.940	15	Y	20.0	3
WB	0.0%	2.0%	N	10	10	.940	180	Y	20.0	3
NB	0.0%	2.0%	N	0	20	.940	100	Y	23.5	3
SB	0.0%	2.0%	N	0	25	.940	310	Y	23.5	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*	*	*														42.6	4	A
2									*	*	*		*	*	*		36.6	4	A
3					*	*	*										18.7	4	A
4				*				*				*				*	0.0	10	A

CYCLE= 120.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	153	878	193	.940	163	934	205
WB	35	533	12	.940	37	567	13
NB	0	713	13	.940	0	759	14
SB	0	1376	21	.940	0	1464	22

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
EB	LT-TH-RT	1302	3	1.10	1432	0.13	0.16
WB	LT	37	1	1.00	37	1.00	0.00
WB	TH-RT	580	3	1.10	638	0.00	0.02
NB	TH-RT	772	2	1.05	811	0.00	0.02
SB	TH-RT	1486	4	1.10	1635	0.00	0.02

SURFACE ARTERY/LINCOLN ST/ESSEX ST
1995 NO BUILD PM PEAK WITH EXISTING NETWORK
date: 05-08-1989 time: 09:50:55

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH-RT	1800	3	1.000	0.990	1.000	1.000	0.986	0.900	0.976	1.000	4633
WB	LT	1800	1	1.000	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1524
WB	TH-RT	1800	3	1.000	0.990	1.000	1.000	0.986	0.900	0.997	1.000	4729
NB	TH-RT	1800	2	1.000	0.990	1.000	1.000	0.958	0.900	0.997	1.000	3066
SB	TH-RT	1800	4	1.000	0.990	1.000	1.000	0.974	0.900	0.998	1.000	6235

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH-RT	1432	4633	0.31	0.36	1651	0.87	*
WB	LT	37	1524	0.02	0.16	237	0.16	
WB	TH-RT	638	4729	0.13	0.16	735	0.87	*
NB	TH-RT	811	3066	0.26	0.30	935	0.87	*
SB	TH-RT	1635	6235	0.26	0.30	1901	0.86	

CYCLE=120.0 LOST=22.0 SUM V/S CRIT= 0.71 TOTAL V/C= 0.87

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH-RT	0.87	*	0.36	120.0	27.35	1651	4.26	0.85	26.86	D	27.9	85
WB	LT	0.16		0.16	120.0	33.34	237	0.00	1.00	33.34	D	1.0	4
WB	TH-RT	0.87	*	0.16	120.0	37.60	735	8.77	0.85	39.41	D	16.4	50
NB	TH-RT	0.87	*	0.30	120.0	29.96	935	7.12	0.85	31.51	D	17.9	55
SB	TH-RT	0.86		0.30	120.0	29.87	1901	3.49	0.85	28.36	D	34.4	104

DIR	STREET	DELAY	LOS
EB	ESSEX ST	26.86	D
WB	LINCOLN ST	39.08	D
NB	SURFACE ARTERY	31.51	D
SB	SURFACE ARTERY	28.36	D

INTERSECTION DELAY = 30.04 INTERSECTION LOS=D

THE EXISTING TIMING IS OPTIMAL

SURFACE ARTERY/LINCOLN ST/ESSEX ST
1995 BUILD AM PEAK WITH EXISTING NETWORK
Date: 05-08-1989 Time: 10:06:44

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=21PM GEOMETRICS=21PM SIGNAL=21PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	ESSEX ST	131	663	82	676	0	3	0	0.0	12.0	0.0	52
WB	LINCOLN ST	72	1624	33	1729	1	3	0	12.0	12.0	0.0	30
NB	SURFACE ARTERY	0	522	19	541	0	2	0	0.0	12.0	0.0	58
SB	SURFACE ARTERY	0	883	79	962	0	4	0	0.0	12.0	0.0	66

TOTAL VOLUME = 4108

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.940	15	Y	20.0	3
WB	0.0%	2.0%	N	10	10	.940	180	Y	20.0	3
NB	0.0%	2.0%	N	0	20	.940	100	Y	23.5	3
SB	0.0%	2.0%	N	0	25	.940	310	Y	23.5	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*	*	*														26.0	4	A
2									*	*	*		*	*	*		23.4	4	A
3					*	*	*										48.6	4	A
4				*				*				*				*	0.0	10	A

CYCLE= 120.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	131	663	82	.940	139	705	87
WB	72	1624	33	.940	77	1728	35
NB	0	522	19	.940	0	555	20
SB	0	883	79	.940	0	939	84

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
EB	LT-TH-RT	932	3	1.10	1025	0.15	0.09
WB	LT	77	1	1.00	77	1.00	0.00
WB	TH-RT	1763	3	1.10	1939	0.00	0.02
NB	TH-RT	576	2	1.05	604	0.00	0.04
SB	TH-RT	1023	4	1.10	1126	0.00	0.08

SURFACE ARTERY/LINCOLN ST/ESSEX ST
1995 BUILD AM PEAK WITH EXISTING NETWORK
date: 05-08-1989 time: 10:06:45

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH-RT	1800	3	1.000	0.990	1.000	1.000	0.986	0.900	0.986	1.000	4678
WB	LT	1800	1	1.000	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1524
WB	TH-RT	1800	3	1.000	0.990	1.000	1.000	0.986	0.900	0.997	1.000	4731
NB	TH-RT	1800	2	1.000	0.990	1.000	1.000	0.958	0.900	0.995	1.000	3058
SB	TH-RT	1800	4	1.000	0.990	1.000	1.000	0.974	0.900	0.988	1.000	6172

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH-RT	1025	4678	0.22	0.22	1013	1.01	*
WB	LT	77	1524	0.05	0.40	617	0.12	
WB	TH-RT	1939	4731	0.41	0.40	1916	1.01	*
NB	TH-RT	604	3058	0.20	0.20	597	1.01	*
SB	TH-RT	1126	6172	0.18	0.20	1205	0.93	

CYCLE=120.0 LOST=22.0 SUM V/S CRIT= 0.83 TOTAL V/C= 1.01

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH-RT	1.01	*	0.22	120.0	35.85	1013	24.21	0.85	51.05	E	29.3	89
WB	LT	0.12		0.40	120.0	17.00	617	0.00	1.00	17.00	C	1.5	5
WB	TH-RT	1.01	*	0.40	120.0	27.36	1916	18.24	0.85	38.76	D	42.2	127
NB	TH-RT	1.01	*	0.20	120.0	36.81	597	30.84	0.85	57.50	E	19.7	60
SB	TH-RT	0.93		0.20	120.0	36.12	1205	10.41	0.85	39.55	D	28.3	86

DIR	STREET	DELAY	LOS
EB	ESSEX ST	51.05	E
WB	LINCOLN ST	37.94	D
NB	SURFACE ARTERY	57.50	E
SB	SURFACE ARTERY	39.55	D

INTERSECTION DELAY = 43.61 INTERSECTION LOS=E

THE EXISTING TIMING IS OPTIMAL

SURFACE ARTERY/LINCOLN ST/ESSEX ST
1995 BUILD PM PEAK WITH EXISTING NETWORK
Date: 05-08-1989 Time: 10:08:56

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=21PM GEOMETRICS=21PM SIGNAL=21PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	ESSEX ST	153	999	266	1418	0	3	0	0.0	12.0	0.0	52
WB	LINCOLN ST	35	672	12	719	1	3	0	12.0	12.0	0.0	30
NB	SURFACE ARTERY	0	713	13	726	0	2	0	0.0	12.0	0.0	58
SB	SURFACE ARTERY	0	1376	21	1397	0	4	0	0.0	12.0	0.0	66

TOTAL VOLUME = 4260

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.940	15	Y	20.0	3
WB	0.0%	2.0%	N	10	10	.940	180	Y	20.0	3
NB	0.0%	2.0%	N	0	20	.940	100	Y	23.5	3
SB	0.0%	2.0%	N	0	25	.940	310	Y	23.5	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*	*	*														49.9	0	A
2									*	*	*		*	*	*		36.7	0	A
3					*	*	*										23.4	0	A
4				*				*				*				*	0.0	10	A

CYCLE= 120.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	153	999	266	.940	163	1063	283
WB	35	672	12	.940	37	715	13
NB	0	713	13	.940	0	759	14
SB	0	1376	21	.940	0	1464	22

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
EB	LT-TH-RT	1509	3	1.10	1659	0.11	0.19
WB	LT	37	1	1.00	37	1.00	0.00
WB	TH-RT	728	3	1.10	800	0.00	0.02
NB	TH-RT	772	2	1.05	811	0.00	0.02
SB	TH-RT	1486	4	1.10	1635	0.00	0.02

SURFACE ARTERY/LINCOLN ST/ESSEX ST
1995 BUILD PM PEAK WITH EXISTING NETWORK
date: 05-08-1989 time: 10:08:57

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH-RT	1800	3	1.000	0.990	1.000	1.000	0.986	0.900	0.972	1.000	4612
WB	LT	1800	1	1.000	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1524
WB	TH-RT	1800	3	1.000	0.990	1.000	1.000	0.986	0.900	0.997	1.000	4733
NB	TH-RT	1800	2	1.000	0.990	1.000	1.000	0.958	0.900	0.997	1.000	3068
SB	TH-RT	1800	4	1.000	0.990	1.000	1.000	0.974	0.900	0.998	1.000	6235

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH-RT	1659	4612	0.36	0.42	1917	0.87	*
WB	LT	37	1524	0.02	0.20	298	0.13	
WB	TH-RT	800	4733	0.17	0.20	925	0.87	*
NB	TH-RT	811	3068	0.26	0.31	937	0.87	*
SB	TH-RT	1635	6235	0.26	0.31	1905	0.86	

CYCLE=120.0 LOST=10.0 SUM V/S CRIT= 0.79 TOTAL V/C= 0.87

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH-RT	0.87	*	0.42	120.0	24.32	1917	3.64	0.85	23.77	C	29.4	89
WB	LT	0.13		0.20	120.0	30.26	298	0.00	1.00	30.26	D	1.0	4
WB	TH-RT	0.87	*	0.20	120.0	35.53	925	7.07	0.85	38.21	D	19.5	59
NB	TH-RT	0.87	*	0.31	120.0	29.90	937	8.99	0.85	31.35	D	17.9	55
SB	TH-RT	0.86		0.31	120.0	29.80	1905	3.43	0.85	28.25	D	34.4	104

DIR	STREET	DELAY	LOS
EB	ESSEX ST	23.77	C
WB	LINCOLN ST	35.94	D
NB	SURFACE ARTERY	31.35	D
SB	SURFACE ARTERY	28.25	D

INTERSECTION DELAY = 28.56 INTERSECTION LOS=D

THE EXISTING TIMING IS OPTIMAL

SURFACE ARTERY/LINCOLN ST/ESSEX ST
1995 NO BUILD AM PEAK WITH REVISED NETWORK
Date: 05-08-1989 Time: 09:37:07

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=21PM GEOMETRICS=21PM SIGNAL=21PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

DIR	STREET	VOLUMES LT	TH	RT	TOTAL	# OF LANES LT	TH	RT	LANE WIDTH LT	TH	RT	CROSS WALK
EB	ESSEX ST	131	641	68	840	0	3	0	0.0	12.0	0.0	52
WB	LINCOLN ST	193	1396	33	1622	1	3	0	12.0	12.0	0.0	30
NB	SURFACE ARTERY	0	512	19	531	0	2	0	0.0	12.0	0.0	56
SB	SURFACE ARTERY	0	944	79	1023	0	4	0	0.0	12.0	0.0	66

TOTAL VOLUME = 4016

TRAFFIC & ROADWAY CONDITIONS

DIR	GRADE	%HV	ADJ PARK Y/N	MOVES	BUSES	PHF	PEDESTRIANS CROSS	BUT	MIN TIME	ARR TYPE
EB	0.0%	2.0%	N	0	10	.940	15	Y	20.0	3
WB	0.0%	2.0%	N	10	10	.940	180	Y	20.0	3
NB	0.0%	2.0%	N	0	20	.940	100	Y	23.5	3
SB	0.0%	2.0%	N	0	25	.940	310	Y	23.5	3

PHASINGS

	EASTBOUND l	t	r	p	WESTBOUND l	t	r	p	NORTHBOUND l	t	r	p	SOUTHBOUND l	t	r	p	GREEN	Y+R	PRE/ACT
1	*	*	*														27.1	4	A
2									*	*	*		*	*	*		25.1	4	A
3					*	*	*										45.8	4	A
4				*				*				*				*	0.0	10	A

CYCLE= 120.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	131	641	68	.940	139	682	72
WB	193	1396	33	.940	205	1485	35
NB	0	512	19	.940	0	545	20
SB	0	944	79	.940	0	1004	84

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
EB	LT-TH-RT	894	3	1.10	983	0.16	0.08
WB	LT	205	1	1.00	205	1.00	0.00
WB	TH-RT	1520	3	1.10	1672	0.00	0.02
NB	TH-RT	565	2	1.05	593	0.00	0.04
SB	TH-RT	1088	4	1.10	1197	0.00	0.08

SURFACE ARTERY/LINCOLN ST/ESSEX ST
1995 NO BUILD AM PEAK WITH REVISED NETWORK
date: 05-08-1989 time: 09:37:09

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH-RT	1800	3	1.000	0.990	1.000	1.000	0.986	0.900	0.988	1.000	4687
WB	LT	1800	1	1.000	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1524
WB	TH-RT	1800	3	1.000	0.990	1.000	1.000	0.986	0.900	0.997	1.000	4729
NB	TH-RT	1800	2	1.000	0.990	1.000	1.000	0.958	0.900	0.995	1.000	3058
SB	TH-RT	1800	4	1.000	0.990	1.000	1.000	0.974	0.900	0.988	1.000	6176

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH-RT	983	4687	0.21	0.23	1060	0.93	*
WB	LT	205	1524	0.13	0.38	581	0.35	
WB	TH-RT	1672	4729	0.35	0.38	1803	0.93	*
NB	TH-RT	593	3058	0.19	0.21	640	0.93	*
SB	TH-RT	1197	6176	0.19	0.21	1292	0.93	

CYCLE=120.0 LOST=22.0 SUM V/S CRIT= 0.76 TOTAL V/C= 0.93

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH-RT	0.93	*	0.23	120.0	34.55	1060	10.76	0.85	38.51	D	24.0	73
WB	LT	0.35		0.38	120.0	20.17	581	0.00	1.00	20.17	C	4.2	14
WB	TH-RT	0.93	*	0.38	120.0	27.00	1803	7.05	0.85	28.94	D	31.6	96
NB	TH-RT	0.93	*	0.21	120.0	35.38	640	15.68	0.85	43.40	E	16.3	50
SB	TH-RT	0.93		0.21	120.0	35.37	1292	9.15	0.85	37.85	D	29.2	89

DIR	STREET	DELAY	LOS
EB	ESSEX ST	38.51	D
WB	LINCOLN ST	27.98	D
NB	SURFACE ARTERY	43.40	E
SB	SURFACE ARTERY	37.85	D

INTERSECTION DELAY = 34.71 INTERSECTION LOS=D

THE EXISTING TIMING IS OPTIMAL

SURFACE ARTERY/LINCOLN ST/ESSEX ST
1995 NO BUILD PM PEAK WITH REVISED NETWORK
Date: 05-08-1989 Time: 09:39:33

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=21PM GEOMETRICS=21PM SIGNAL=21PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	ESSEX ST	153	872	192	1217	0	3	0	0.0	12.0	0.0	52
WB	LINCOLN ST	141	535	12	688	1	3	0	12.0	12.0	0.0	30
NB	SURFACE ARTERY	0	713	13	726	0	2	0	0.0	12.0	0.0	58
SB	SURFACE ARTERY	0	1474	21	1495	0	4	0	0.0	12.0	0.0	66

TOTAL VOLUME = 4126

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.940	15	Y	20.0	3
WB	0.0%	2.0%	N	10	10	.940	180	Y	20.0	3
NB	0.0%	2.0%	N	0	20	.940	100	Y	23.5	3
SB	0.0%	2.0%	N	0	25	.940	310	Y	23.5	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*	*	*														41.6	4	A
2									*	*	*		*	*	*		38.0	4	A
3					*	*	*										18.3	4	A
4				*				*				*				*	0.0	10	A

CYCLE= 120.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	153	872	192	.940	163	928	204
WB	141	535	12	.940	150	569	13
NB	0	713	13	.940	0	759	14
SB	0	1474	21	.940	0	1568	22

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT-TH-RT	1295	3	1.10	1424	0.13	0.16
WB	LT	150	1	1.00	150	1.00	0.00
WB	TH-RT	582	3	1.10	640	0.00	0.02
NB	TH-RT	772	2	1.05	811	0.00	0.02
SB	TH-RT	1590	4	1.10	1749	0.00	0.01

SURFACE ARTERY/LINCOLN ST/ESSEX ST
1995 NO BUILD PM PEAK WITH REVISED NETWORK
date: 05-08-1989 time: 09:39:34

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH-RT	1800	3	1.000	0.990	1.000	1.000	0.986	0.900	0.976	1.000	4633
WB	LT	1600	1	1.000	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1524
WB	TH-RT	1800	3	1.000	0.990	1.000	1.000	0.986	0.900	0.997	1.000	4729
NB	TH-RT	1800	2	1.000	0.990	1.000	1.000	0.958	0.900	0.997	1.000	3066
SB	TH-RT	1800	4	1.000	0.990	1.000	1.000	0.974	0.900	0.998	1.000	6236

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH-RT	1424	4633	0.31	0.35	1608	0.89	*
WB	LT	150	1524	0.10	0.15	233	0.64	
WB	TH-RT	640	4729	0.14	0.15	723	0.89	*
NB	TH-RT	811	3066	0.26	0.32	971	0.83	
SB	TH-RT	1749	6236	0.28	0.32	1975	0.89	*

CYCLE=120.0 LOST=22.0 SUM V/S CRIT= 0.72 TOTAL V/C= 0.89

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH-RT	0.89	*	0.35	120.0	28.07	1608	5.14	0.85	28.23	D	28.2	85
WB	LT	0.64		0.15	120.0	36.30	233	4.64	1.00	40.94	E	4.3	14
WB	TH-RT	0.89	*	0.15	120.0	37.85	723	10.26	0.85	40.90	E	16.8	51
NB	TH-RT	0.83		0.32	120.0	28.94	971	5.29	0.85	29.10	D	17.6	54
SB	TH-RT	0.89	*	0.32	120.0	29.59	1975	4.27	0.85	28.78	D	36.2	109

DIR	STREET	DELAY	LOS
EB	ESSEX ST	28.23	D
WB	LINCOLN ST	40.90	E
NB	SURFACE ARTERY	29.10	D
SB	SURFACE ARTERY	28.78	D

INTERSECTION DELAY = 30.67 INTERSECTION LOS=D

THE EXISTING TIMING IS OPTIMAL

SURFACE ARTERY/LINCOLN ST/ESSEX ST
1995 BUILD AM PEAK WITH REVISED NETWORK
Date: 05-08-1989 Time: 09:42:10

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=21PM GEOMETRICS=21PM SIGNAL=21PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

DIR	STREET	VOLUMES LT	TH	RT	TOTAL	# OF LANES LT	TH	RT	LANE WIDTH LT	TH	RT	CROSS WALK
EB	ESSEX ST	131	663	82	876	0	3	0	0.0	12.0	0.0	52
WB	LINCOLN ST	346	1500	33	1879	1	3	0	12.0	12.0	0.0	30
NB	SURFACE ARTERY	0	512	19	531	0	2	0	0.0	12.0	0.0	56
SB	SURFACE ARTERY	0	1005	79	1084	0	4	0	0.0	12.0	0.0	66

TOTAL VOLUME = 4370

TRAFFIC & ROADWAY CONDITIONS

DIR	GRADE	%HV	ADJ PARK Y/N	MOVES	BUSES	PHF	PEDESTRIANS CROSS	BUT	MIN TIME	ARR TYPE
EB	0.0%	2.0%	N	0	10	.940	15	Y	20.0	3
WB	0.0%	2.0%	N	10	10	.940	180	Y	20.0	3
NB	0.0%	2.0%	N	0	20	.940	100	Y	23.5	3
SB	0.0%	2.0%	N	0	25	.940	310	Y	23.5	3

PHASINGS

	EASTBOUND l	t	r	p	WESTBOUND l	t	r	p	NORTHBOUND l	t	r	p	SOUTHBOUND l	t	r	p	GREEN	Y+R	PRE/ACT
1	*	*	*														28.7	4	A
2									*	*	*		*	*	*		25.0	4	A
3					*	*	*										46.3	4	A
4				*				*				*				*	0.0	10	A

CYCLE= 120.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	131	663	82	.940	139	705	87
WB	346	1500	33	.940	368	1596	35
NB	0	512	19	.940	0	545	20
SB	0	1005	79	.940	0	1069	84

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
EB	LT-TH-RT	932	3	1.10	1025	0.15	0.09
WB	LT	368	1	1.00	368	1.00	0.00
WB	TH-RT	1631	3	1.10	1794	0.00	0.02
NB	TH-RT	585	2	1.05	593	0.00	0.04
SB	TH-RT	1153	4	1.10	1269	0.00	0.07

SURFACE ARTERY/LINCOLN ST/ESSEX ST
1995 BUILD AM PEAK WITH REVISED NETWORK
date: 05-08-1989 time: 09:42:11

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH-RT	1800	3	1.000	0.990	1.000	1.000	0.986	0.900	0.988	1.000	4678
WB	LT	1800	1	1.000	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1524
WB	TH-RT	1800	3	1.000	0.990	1.000	1.000	0.986	0.900	0.997	1.000	4730
NB	TH-RT	1800	2	1.000	0.990	1.000	1.000	0.958	0.900	0.995	1.000	3058
SB	TH-RT	1800	4	1.000	0.990	1.000	1.000	0.974	0.900	0.989	1.000	6180

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH-RT	1025	4678	0.22	0.22	1042	0.98	*
WB	LT	388	1524	0.24	0.39	587	0.63	
WB	TH-RT	1794	4730	0.38	0.39	1823	0.98	*
NB	TH-RT	593	3058	0.19	0.21	638	0.93	
SB	TH-RT	1269	6180	0.21	0.21	1289	0.98	*

CYCLE=120.0 LOST=22.0 SUM V/S CRIT= 0.80 TOTAL V/C= 0.98

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH-RT	0.98	*	0.22	120.0	35.29	1042	18.52	0.85	45.73	E	27.5	83
WB	LT	0.63		0.39	120.0	22.71	587	1.58	1.00	24.29	C	7.5	24
WB	TH-RT	0.98	*	0.39	120.0	27.75	1823	13.43	0.85	35.00	D	37.3	113
NB	TH-RT	0.93		0.21	120.0	35.44	638	16.04	0.85	43.76	E	16.4	50
SB	TH-RT	0.98	*	0.21	120.0	35.94	1289	16.41	0.85	44.49	E	33.7	102

DIR	STREET	DELAY	LOS
EB	ESSEX ST	45.73	E
WB	LINCOLN ST	33.17	D
NB	SURFACE ARTERY	43.76	E
SB	SURFACE ARTERY	44.49	E

INTERSECTION DELAY = 39.81 INTERSECTION LOS=D

THE EXISTING TIMING IS OPTIMAL

SURFACE ARTERY/LINCOLN ST/ESSEX ST
1995 BUILD PM PEAK WITH REVISED NETWORK
Date: 05-08-1989 Time: 09:44:10

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=21PM GEOMETRICS=21PM SIGNAL=21PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	ESSEX ST	153	993	265	1411	0	3	0	0.0	12.0	0.0	52
WB	LINCOLN ST	226	592	12	830	1	3	0	12.0	12.0	0.0	30
NB	SURFACE ARTERY	0	713	13	726	0	2	0	0.0	12.0	0.0	56
SB	SURFACE ARTERY	0	1508	21	1529	0	4	0	0.0	12.0	0.0	66

TOTAL VOLUME = 4496

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.940	15	Y	20.0	3
WB	0.0%	2.0%	N	10	10	.940	180	Y	20.0	3
NB	0.0%	2.0%	N	0	20	.940	100	Y	23.5	3
SB	0.0%	2.0%	N	0	25	.940	310	Y	23.5	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*	*	*														43.7	4	A
2									*	*	*		*	*	*		35.0	4	A
3					*	*	*										19.3	4	A
4				*				*				*				*	0.0	10	A

CYCLE= 120.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	153	993	265	.940	163	1056	282
WB	226	592	12	.940	240	630	13
NB	0	713	13	.940	0	759	14
SB	0	1508	21	.940	0	1604	22

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	P1t	Prt
EB	LT-TH-RT	1501	3	1.10	1651	0.11	0.19
WB	LT	240	1	1.00	240	1.00	0.00
WB	TH-RT	643	3	1.10	707	0.00	0.02
NB	TH-RT	772	2	1.05	811	0.00	0.02
SB	TH-RT	1627	4	1.10	1789	0.00	0.01

SURFACE ARTERY/LINCOLN ST/ESSEX ST
1995 BUILD PM PEAK WITH REVISED NETWORK
date: 05-08-1989 time: 09:44:11

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH-RT	1800	3	1.000	0.990	1.000	1.000	0.986	0.900	0.972	1.000	4611
WB	LT	1800	1	1.000	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1524
WB	TH-RT	1800	3	1.000	0.990	1.000	1.000	0.986	0.900	0.997	1.000	4731
NB	TH-RT	1800	2	1.000	0.990	1.000	1.000	0.958	0.900	0.997	1.000	3066
SB	TH-RT	1800	4	1.000	0.990	1.000	1.000	0.974	0.900	0.998	1.000	6236

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH-RT	1651	4611	0.36	0.36	1680	0.98	*
WB	LT	240	1524	0.16	0.16	245	0.98	*
WB	TH-RT	707	4731	0.15	0.16	759	0.93	
NB	TH-RT	811	3066	0.26	0.29	895	0.91	
SB	TH-RT	1789	6236	0.29	0.29	1820	0.98	*

CYCLE=120.0 LOST=22.0 SUM V/S CRIT= 0.60 TOTAL V/C= 0.96

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH-RT	0.98	*	0.36	120.0	28.71	1680	13.91	0.85	36.23	D	35.5	107
WB	LT	0.98	*	0.16	120.0	38.18	245	40.65	1.00	76.80	F	10.2	32
WB	TH-RT	0.93		0.16	120.0	37.78	759	14.23	0.85	44.21	E	19.2	59
NB	TH-RT	0.91		0.29	120.0	31.09	895	10.19	0.85	35.08	D	16.9	56
SB	TH-RT	0.98	*	0.29	120.0	32.06	1820	13.27	0.85	38.53	D	41.8	126

DIR	STREET	DELAY	LOS
EB	ESSEX ST	36.23	D
WB	LINCOLN ST	52.99	E
NB	SURFACE ARTERY	35.08	D
SB	SURFACE ARTERY	38.53	D

INTERSECTION DELAY = 39.90 INTERSECTION LOS=D

THE EXISTING TIMING IS OPTIMAL

CHAUNCY ST/BEDFORD ST/GARAGE ENTRANCE-EXIT
1995 AM PEAK BUILD EXISTING NETWORK
Date: 05-08-1989 Time: 19:20:01

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME= GEOMETRICS= SIGNAL=

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	GARAGE ENT/EXIT	39	47	7	93	0	2	0	0.0	12.0	0.0	30
WB	BEDFORD ST	393	342	98	833	1	1	0	12.0	12.0	0.0	30
NB	CHAUNCY ST	103	280	132	515	0	1	0	0.0	12.0	0.0	30
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	0

TOTAL VOLUME = 1441

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	0.0%	N	0	0	.900	100	Y	14.5	3
WB	0.0%	3.0%	N	0	0	.900	100	Y	14.5	3
NB	0.0%	3.0%	N	0	0	.900	100	Y	14.5	3
SB	0.0%	0.0%	N	0	0	.000	0		14.5	0

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*	*	*		*	*	*										20.6	4	A
2									*	*	*						31.4	4	A

CYCLE= 60.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	39	47	7	.900	43	52	8
WB	393	342	98	.900	437	380	109
NB	103	280	132	.900	114	311	147
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT-TH-RT	103	2	1.05	109	0.42	0.08
WB	LT	437	1	1.00	437	1.00	0.00
WB	TH-RT	489	1	1.00	489	0.00	0.22
NB	LT-TH-RT	572	1	1.00	572	0.20	0.26

CHAUNCY ST/BEDFORD ST/GARAGE ENTRANCE-EXIT
1995 AM PEAK BUILD EXISTING NETWORK
date: 05-08-1989 time: 19:20:02

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH-RT	1800	2	1.000	1.000	1.000	1.000	1.000	0.900	0.989	0.670	2145
WB	LT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	1.000	0.856	1367
WB	TH-RT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	0.967	1.000	1543
NB	LT-TH-RT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	0.853	0.863	1176

SUPPLEMENTAL WORKSHEET FOR
LEFT-TURN ADJUSTMENT FACTOR FLT
INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	No	Vo	Plto	LGo
EB	60	21	2	103	103	43	0.42	1	489	0.00	0
WB	60	21	1	437	489	437	1.00	2	103	0.42	0

CALCULATIONS

DIR	Sop	Yo	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
EB	1800	0.272	5.920	0.569	1.000	14.688	0.000	0.000	1.976	0.340	0.670
WB	2555	0.040	18.948	0.810	1.000	1.660	0.000	0.000	1.388	0.856	0.856

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH-RT	109	2145	0.05	0.34	737	0.15	
WB	LT	437	1367	0.32	0.34	469	0.93	*
WB	TH-RT	489	1543	0.32	0.34	530	0.92	
NB	LT-TH-RT	572	1176	0.49	0.52	615	0.93	*

CYCLE= 60.0 LOST= 8.0 SUM V/S CRIT= 0.81 TOTAL V/C= 0.93

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH-RT	0.15		0.34	60.0	10.35	737	0.00	0.85	8.80	B	1.1	4
WB	LT	0.93	*	0.34	60.0	14.44	469	19.90	0.85	29.19	D	7.0	22
WB	TH-RT	0.92		0.34	60.0	14.39	530	17.32	0.85	26.95	D	7.4	23
NB	LT-TH-RT	0.93	*	0.52	60.0	10.10	615	16.48	0.85	22.59	C	6.9	22

DIR	STREET	DELAY	LOS
EB	GARAGE ENT/EXIT	8.80	B
WB	BEDFORD ST	28.01	D
NB	CHAUNCY ST	22.59	C

INTERSECTION DELAY = 24.78 INTERSECTION LOS=C

THE EXISTING TIMING IS OPTIMAL

CHAUNCY ST/BEDFORD ST/GARAGE ENTRANCE-EXIT
1995 PM PEAK BUILD EXISTING NETWORK
Date: 05-08-1989 Time: 19:22:18

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME= GEOMETRICS= SIGNAL=

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	GARAGE ENT/EXIT	180	268	79	527	0	2	0	0.0	12.0	0.0	30
WB	BEDFORD ST	296	198	52	546	1	1	0	12.0	12.0	0.0	30
NB	CHAUNCY ST	61	319	61	441	0	1	0	0.0	12.0	0.0	30
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	0

TOTAL VOLUME = 1514

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	0.0%	N	0	0	.900	100	Y	14.5	3
WB	0.0%	3.0%	N	0	0	.900	100	Y	14.5	3
NB	0.0%	3.0%	N	0	0	.900	100	Y	14.5	3
SB	0.0%	0.0%	N	0	0	.000	0		14.5	0

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*	*	*		*	*	*										27.3	4	A
2									*	*	*						24.7	4	A

CYCLE= 60.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	180	268	79	.900	200	298	88
WB	296	198	52	.900	329	220	58
NB	61	319	61	.900	68	354	68
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT-TH-RT	586	2	1.05	615	0.34	0.15
WB	LT	329	1	1.00	329	1.00	0.00
WB	TH-RT	278	1	1.00	278	0.00	0.21
NB	LT-TH-RT	490	1	1.00	490	0.14	0.14

CHAUNCY ST/BEDFORD ST/GARAGE ENTRANCE-EXIT
1995 PM PEAK BUILD EXISTING NETWORK
date: 05-08-1989 time: 19:22:19

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH-RT	1800	2	1.000	1.000	1.000	1.000	1.000	0.900	0.978	0.836	2647
WB	LT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	1.000	0.467	745
WB	TH-RT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	0.969	1.000	1546
NB	LT-TH-RT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	0.875	0.875	1221

SUPPLEMENTAL WORKSHEET FOR
LEFT-TURN ADJUSTMENT FACTOR FLT
INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	No	Vo	Plto	LGo
EB	60	27	2	586	586	200	0.34	1	278	0.00	0
WB	60	27	1	329	278	329	1.00	2	586	0.34	0

CALCULATIONS

DIR	Sop	Yo	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
EB	1800	0.154	21.282	0.701	0.821	5.975	0.179	0.434	1.604	0.672	0.836
WB	2984	0.196	19.264	0.509	1.000	7.993	0.000	0.000	2.210	0.467	0.467

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH-RT	615	2647	0.23	0.45	1202	0.51	
WB	LT	329	745	0.44	0.45	338	0.97	*
WB	TH-RT	278	1546	0.18	0.45	702	0.40	
NB	LT-TH-RT	490	1221	0.40	0.41	504	0.97	*

CYCLE= 60.0 LOST= 8.0 SUM V/S CRIT= 0.84 TOTAL V/C= 0.97

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH-RT	0.51		0.45	60.0	8.84	1202	0.05	0.85	7.56	B	5.3	17
WB	LT	0.97	*	0.45	60.0	12.16	338	32.08	0.85	37.61	D	6.0	19
WB	TH-RT	0.40		0.45	60.0	8.28	702	0.00	0.85	7.04	B	2.5	8
NB	LT-TH-RT	0.97	*	0.41	60.0	13.15	504	25.67	0.85	33.00	D	8.2	26

DIR	STREET	DELAY	LOS
EB	GARAGE ENT/EXIT	7.56	B
WB	BEDFORD ST	23.61	C
NB	CHAUNCY ST	33.00	D

INTERSECTION DELAY = 20.53 INTERSECTION LOS=C

THE EXISTING TIMING IS OPTIMAL

CHAUNCY ST/BEDFORD ST/GARAGE ENTRANCE-EXIT
1995 SAT PEAK BUILD EXISTING NETWORK
Date: 05-08-1989 Time: 19:27:49

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME= GEOMETRICS= SIGNAL=

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	GARAGE ENT/EXIT	75	108	20	203	0	2	0	0.0	12.0	0.0	30
WB	BEDFORD ST	325	160	120	605	1	1	0	12.0	12.0	0.0	30
NB	CHAUNCY ST	62	224	101	387	0	1	0	0.0	12.0	0.0	30
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	0

TOTAL VOLUME = 1195

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	0.0%	N	0	0	.900	100	Y	14.5	3
WB	0.0%	3.0%	N	0	0	.900	100	Y	14.5	3
NB	0.0%	3.0%	N	0	0	.900	100	Y	14.5	3
SB	0.0%	0.0%	N	0	0	.000	0		14.5	0

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*	*	*		*	*	*										23.8	4	A
2									*	*	*						28.2	4	A

CYCLE= 60.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	75	108	20	.900	83	120	22
WB	325	160	120	.900	361	178	133
NB	62	224	101	.900	69	249	112
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT-TH-RT	226	2	1.05	237	0.37	0.10
WB	LT	361	1	1.00	361	1.00	0.00
WB	TH-RT	311	1	1.00	311	0.00	0.43
NB	LT-TH-RT	430	1	1.00	430	0.16	0.26

CHAUNCY ST/BEDFORD ST/GARAGE ENTRANCE-EXIT
1995 SAT PEAK BUILD EXISTING NETWORK
date: 05-08-1989 time: 19:27:50

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH-RT	1800	2	1.000	1.000	1.000	1.000	1.000	0.900	0.985	0.796	2541
WB	LT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	1.000	0.737	1176
WB	TH-RT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	0.936	1.000	1493
NB	LT-TH-RT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	0.852	0.871	1185

SUPPLEMENTAL WORKSHEET FOR
LEFT-TURN ADJUSTMENT FACTOR FLT
INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	No	Vo	Plto	LGo
EB	60	24	2	226	226	83	0.37	1	311	0.00	0
WB	60	24	1	361	311	361	1.00	2	226	0.37	0

CALCULATIONS

DIR	Sop	Yo	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
EB	1800	0.173	16.273	0.681	0.935	7.558	0.065	0.140	1.653	0.592	0.796
WB	2900	0.078	20.781	0.734	1.000	3.050	0.000	0.000	1.533	0.737	0.737

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH-RT	237	2541	0.09	0.40	1009	0.23	
WB	LT	361	1176	0.31	0.40	467	0.77	*
WB	TH-RT	311	1493	0.21	0.40	593	0.52	
NB	LT-TH-RT	430	1185	0.36	0.47	556	0.77	*

CYCLE= 60.0 LOST= 8.0 SUM V/S CRIT= 0.67 TOTAL V/C= 0.77

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH-RT	0.23		0.40	60.0	9.14	1009	0.00	0.85	7.77	B	2.3	
WB	LT	0.77	*	0.40	60.0	11.96	467	6.58	0.85	15.76	C	3.9	
WB	TH-RT	0.52		0.40	60.0	10.47	593	0.24	0.85	9.10	B	3.1	
NB	LT-TH-RT	0.77	*	0.47	60.0	10.07	556	5.60	0.85	13.32	B	4.0	

DIR	STREET	DELAY	LOS
EB	GARAGE ENT/EXIT	7.77	B
WB	BEDFORD ST	12.68	B
NB	CHAUNCY ST	13.32	B

INTERSECTION DELAY = 12.01 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

CHAUNCY ST/BEDFORD ST/GARAGE ENTRANCE-EXIT
1995 AM PEAK BUILD REVISED NETWORK
Date: 05-08-1989 Time: 19:30:13

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME= GEOMETRICS= SIGNAL=

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	GARAGE ENT/EXIT	39	47	7	93	0	2	0	0.0	12.0	0.0	30
WB	BEDFORD ST	183	317	98	598	1	1	0	12.0	12.0	0.0	30
NB	CHAUNCY ST	164	309	132	605	0	1	0	0.0	12.0	0.0	30
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	0

TOTAL VOLUME = 1296

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	0.0%	N	0	0	.900	100	Y	14.5	3
WB	0.0%	3.0%	N	0	0	.900	100	Y	14.5	3
NB	0.0%	3.0%	N	0	0	.900	100	Y	14.5	3
SB	0.0%	0.0%	N	0	0	.000	0	.	14.5	0

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*	*	*		*	*	*										17.8	4	A
2									*	*	*						34.2	4	A

CYCLE= 60.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	39	47	7	.900	43	52	8
WB	183	317	98	.900	203	352	109
NB	164	309	132	.900	182	343	147
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT-TH-RT	103	2	1.05	109	0.42	0.08
WB	LT	203	1	1.00	203	1.00	0.00
WB	TH-RT	461	1	1.00	461	0.00	0.24
NB	LT-TH-RT	672	1	1.00	672	0.27	0.22

CHAUNCY ST/BEDFORD ST/GARAGE ENTRANCE-EXIT
1995 AM PEAK BUILD REVISED NETWORK
date: 05-08-1989 time: 19:30:14

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH-RT	1800	2	1.000	1.000	1.000	1.000	1.000	0.900	0.989	0.660	2115
WB	LT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	1.000	0.874	1396
WB	TH-RT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	0.965	1.000	1540
NB	LT-TH-RT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	0.860	0.850	1168

SUPPLEMENTAL WORKSHEET FOR
LEFT-TURN ADJUSTMENT FACTOR FLT
INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	No	Vo	Plto	LGo
EB	60	18	2	103	103	43	0.42	1	461	0.00	0
WB	60	18	1	203	461	203	1.00	2	103	0.42	0

CALCULATIONS

DIR	Sop	Yo	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
EB	1800	0.256	3.260	0.587	1.000	14.535	0.000	0.000	1.917	0.320	0.660
WB	2600	0.040	16.048	0.810	1.000	1.747	0.000	0.000	1.388	0.874	0.874

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH-RT	109	2115	0.05	0.30	627	0.17	
WB	LT	203	1396	0.15	0.30	414	0.49	
WB	TH-RT	461	1540	0.30	0.30	457	1.01	*
NB	LT-TH-RT	672	1168	0.58	0.57	666	1.01	*

CYCLE= 60.0 LOST= 8.0 SUM V/S CRIT= 0.88 TOTAL V/C= 1.01

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH-RT	0.17		0.30	60.0	11.89	627	0.00	0.85	10.11	B	1.2	4
WB	LT	0.49		0.30	60.0	13.21	414	0.00	0.85	11.22	B	2.4	8
WB	TH-RT	1.01	*	0.30	60.0	16.11	457	34.46	0.85	42.98	E	9.9	31
NB	LT-TH-RT	1.01	*	0.57	60.0	9.93	666	28.85	0.85	32.97	D	10.4	32

DIR	STREET	DELAY	LOS
EB	GARAGE ENT/EXIT	10.11	B
WB	BEDFORD ST	33.26	D
NB	CHAUNCY ST	32.97	D

INTERSECTION DELAY = 31.39 INTERSECTION LOS=D

THE EXISTING TIMING IS OPTIMAL

CHAUNCY ST/BEDFORD ST/GARAGE ENTRANCE-EXIT
1995 PM PEAK BUILD REVISED NETWORK
Date: 05-08-1989 Time: 19:33:04

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME= GEOMETRICS= SIGNAL=

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	GARAGE ENT/EXIT	180	268	79	527	0	2	0	0.0	12.0	0.0	30
WB	BEDFORD ST	193	187	53	433	1	1	0	12.0	12.0	0.0	30
NB	CHAUNCY ST	96	324	71	491	0	1	0	0.0	12.0	0.0	30
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	0

TOTAL VOLUME = 1451

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	0.0%	N	0	0	.900	100	Y	14.5	3
WB	0.0%	3.0%	N	0	0	.900	100	Y	14.5	3
NB	0.0%	3.0%	N	0	0	.900	100	Y	14.5	3
SB	0.0%	0.0%	N	0	0	.000	0		14.5	0

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*	*	*		*	*	*										21.0	4	A
2									*	*	*						31.0	4	A

CYCLE= 60.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	180	268	79	.900	200	298	88
WB	193	187	53	.900	214	208	59
NB	96	324	71	.900	107	360	79
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT-TH-RT	586	2	1.05	615	0.34	0.15
WB	LT	214	1	1.00	214	1.00	0.00
WB	TH-RT	267	1	1.00	267	0.00	0.22
NB	LT-TH-RT	546	1	1.00	546	0.20	0.14

CHAUNCY ST/BEDFORD ST/GARAGE ENTRANCE-EXIT
1995 PM PEAK BUILD REVISED NETWORK
date: 05-08-1989 time: 19:33:05

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH-RT	1800	2	1.000	1.000	1.000	1.000	1.000	0.900	0.978	0.824	2609
WB	LT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	1.000	0.439	700
WB	TH-RT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	0.967	1.000	1543
NB	LT-TH-RT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	0.874	0.864	1205

SUPPLEMENTAL WORKSHEET FOR
LEFT-TURN ADJUSTMENT FACTOR FLT
INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	No	Vo	Plto	LGo
EB	60	21	2	586	586	200	0.34	1	267	0.00	0
WB	60	21	1	214	267	214	1.00	2	586	0.34	0

CALCULATIONS

DIR	Sop	Yo	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
EB	1800	0.148	14.190	0.708	0.834	6.787	0.166	0.397	1.588	0.648	0.824
WB	2998	0.195	11.503	0.509	1.000	9.473	0.000	0.000	2.210	0.439	0.439

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH-RT	615	2609	0.24	0.35	912	0.67	
WB	LT	214	700	0.31	0.35	245	0.88	*
WB	TH-RT	267	1543	0.17	0.35	540	0.49	
NB	LT-TH-RT	546	1205	0.45	0.52	623	0.88	*

CYCLE= 60.0 LOST= 8.0 SUM V/S CRIT= 0.76 TOTAL V/C= 0.88

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH-RT	0.67		0.35	60.0	12.62	912	1.60	0.85	12.08	B	6.3	20
WB	LT	0.88	*	0.35	60.0	13.90	245	22.46	0.85	30.91	D	3.6	12
WB	TH-RT	0.49		0.35	60.0	11.66	540	0.00	0.85	9.91	B	2.9	10
NB	LT-TH-RT	0.88	*	0.52	60.0	9.72	623	10.73	0.85	17.38	C	5.6	18

DIR	STREET	DELAY	LOS
EB	GARAGE ENT/EXIT	12.08	B
WB	BEDFORD ST	19.27	C
NB	CHAUNCY ST	17.38	C

INTERSECTION DELAY = 15.95 INTERSECTION LOS=C

THE EXISTING TIMING IS OPTIMAL

CHAUNCY ST/BEDFORD ST/GARAGE ENTRANCE-EXIT
1995 SAT PEAK BUILD REVISED NETWORK
Date: 05-08-1989 Time: 19:34:29

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME= GEOMETRICS= SIGNAL=

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	GARAGE ENT/EXIT	75	108	20	203	0	2	0	0.0	12.0	0.0	30
WB	BEDFORD ST	200	145	120	465	1	1	0	12.0	12.0	0.0	30
NB	CHAUNCY ST	98	251	101	450	0	1	0	0.0	12.0	0.0	30
SB		0	0	0	0	0	0	0	0.0	0.0	0.0	0

TOTAL VOLUME = 1118

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	0.0%	N	0	0	.900	100	Y	14.5	3
WB	0.0%	3.0%	N	0	0	.900	100	Y	14.5	3
NB	0.0%	3.0%	N	0	0	.900	100	Y	14.5	3
SB	0.0%	0.0%	N	0	0	.000	0		14.5	0

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1	*	*	*		*	*	*										16.6	4	A
2									*	*	*						35.4	4	A

CYCLE= 60.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	75	108	20	.900	83	120	22
WB	200	145	120	.900	222	161	133
NB	98	251	101	.900	109	279	112
SB	0	0	0	.000	0	0	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	LT-TH-RT	226	2	1.05	237	0.37	0.10
WB	LT	222	1	1.00	222	1.00	0.00
WB	TH-RT	294	1	1.00	294	0.00	0.45
NB	LT-TH-RT	500	1	1.00	500	0.22	0.22

CHAUNCY ST/BEDFORD ST/GARAGE ENTRANCE-EXIT
1995 SAT PEAK BUILD REVISED NETWORK
date: 05-08-1989 time: 19:34:30

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	LT-TH-RT	1800	2	1.000	1.000	1.000	1.000	1.000	0.900	0.985	0.772	2463
WB	LT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	1.000	0.751	1198
WB	TH-RT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	0.932	1.000	1488
NB	LT-TH-RT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	0.859	0.860	1179

SUPPLEMENTAL WORKSHEET FOR
LEFT-TURN ADJUSTMENT FACTOR FLT
INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	No	Vo	Plto	LGo
EB	60	17	2	226	226	83	0.37	1	294	0.00	0
WB	60	17	1	222	294	222	1.00	2	226	0.37	0

CALCULATIONS

DIR	Sop	Yo	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
EB	1800	0.164	8.053	0.691	0.977	8.498	0.023	0.047	1.628	0.543	0.772
WB	2922	0.077	12.916	0.734	1.000	3.635	0.000	0.000	1.533	0.751	0.751

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	LT-TH-RT	237	2463	0.10	0.28	679	0.35	
WB	LT	222	1198	0.19	0.28	331	0.67	
WB	TH-RT	294	1488	0.20	0.28	410	0.72	*
NB	LT-TH-RT	500	1179	0.42	0.59	697	0.72	*

CYCLE= 60.0 LOST= 8.0 SUM V/S CRIT= 0.62 TOTAL V/C= 0.72

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	LT-TH-RT	0.35		0.28	60.0	13.23	679	0.00	0.85	11.24	B	2.7	9
WB	LT	0.67		0.28	60.0	14.68	331	4.24	0.85	16.08	C	2.7	9
WB	TH-RT	0.72	*	0.28	60.0	14.91	410	4.94	0.85	16.87	C	3.6	12
NB	LT-TH-RT	0.72	*	0.59	60.0	6.63	697	2.97	0.85	8.16	B	3.4	11

DIR	STREET	DELAY	LOS
EB	GARAGE ENT/EXIT	11.24	B
WB	BEDFORD ST	16.53	C
NB	CHAUNCY ST	8.16	B

INTERSECTION DELAY = 12.19 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

AVE DE LAFAYETTE/HARRISON AVE EXT/GARAGE ENTRANCE-EXIT
1995 AM PEAK BUILD REVISED NETWORK
Date: 05-08-1989 Time: 19:42:29

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME= GEOMETRICS= SIGNAL=

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	30
WB	AVE DE LAFAYETTE	432	0	473	905	1	0	1	12.0	0.0	12.0	30
NB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	30
SB	GARAGE ENT/EXIT	0	80	0	80	0	2	0	0.0	12.0	0.0	30

TOTAL VOLUME = 985

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	0.0%	N	0	0	.000	100	Y	14.5	3
WB	0.0%	3.0%	N	0	0	.900	100	Y	14.5	3
NB	0.0%	3.0%	N	0	0	.000	100	Y	14.5	3
SB	0.0%	0.0%	N	0	0	.900	100	Y	14.5	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1					*		*										48.4	4	A
2														*			3.6	4	A

CYCLE= 60.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	432	0	473	.900	480	0	526
NB	0	0	0	.000	0	0	0
SB	0	80	0	.900	0	89	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
WB	LT	480	1	1.00	480	1.00	0.00
WB	RT	526	1	1.00	526	0.00	1.00
SB	TH	89	2	1.05	93	0.00	0.00

AVE DE LAFAYETTE/HARRISON AVE EXT/GARAGE ENTRANCE-EXIT
1995 AM PEAK BUILD REVISED NETWORK
date: 05-08-1989 time: 19:42:30

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	LT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	1.000	0.950	1516
WB	RT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	0.850	1.000	1357
SB	TH	1800	2	1.000	1.000	1.000	1.000	1.000	0.900	1.000	1.000	3240

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	LT	480	1516	0.32	0.81	1223	0.39	
WB	RT	526	1357	0.39	0.81	1094	0.48	*
SB	TH	93	3240	0.03	0.06	194	0.48	*

CYCLE= 60.0 LOST= 8.0 SUM V/S CRIT= 0.42 TOTAL V/C= 0.48

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	LT	0.39		0.81	60.0	1.25	1223	0.00	1.00	1.25	A	1.5	6
WB	RT	0.48	*	0.81	60.0	1.39	1094	0.00	0.85	1.18	A	1.7	6
SB	TH	0.48	*	0.06	60.0	20.74	194	0.00	0.85	17.63	C	1.4	5

DIR	STREET	DELAY	LOS
WB	AVE DE LAFAYETTE	1.21	A
SB	GARAGE ENT/EXIT	17.63	C

INTERSECTION DELAY = 2.61 INTERSECTION LOS=A

THE EXISTING TIMING IS OPTIMAL

AVE DE LAFAYETTE/HARRISON AVE EXT/GARAGE ENTRANCE-EXIT
1995 PM PEAK BUILD REVISED NETWORK
Date: 05-08-1989 Time: 19:40:52

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME= GEOMETRICS= SIGNAL=

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	30
WB	AVE DE LAFAYETTE	533	0	213	746	1	0	1	12.0	0.0	12.0	30
NB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	30
SB	GARAGE ENT/EXIT	0	500	0	500	0	2	0	0.0	12.0	0.0	30

TOTAL VOLUME = 1246

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	0.0%	N	0	0	.000	100	Y	14.5	3
WB	0.0%	3.0%	N	0	0	.900	100	Y	14.5	3
NB	0.0%	3.0%	N	0	0	.000	100	Y	14.5	3
SB	0.0%	0.0%	N	0	0	.900	100	Y	14.5	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1					*		*										35.6	4	A
2														*			16.4	4	A

CYCLE= 60.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	533	0	213	.900	592	0	237
NB	0	0	0	.000	0	0	0
SB	0	500	0	.900	0	556	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
WB	LT	592	1	1.00	592	1.00	0.00
WB	RT	237	1	1.00	237	0.00	1.00
SB	TH	556	2	1.05	583	0.00	0.00

AVE DE LAFAYETTE/HARRISON AVE EXT/GARAGE ENTRANCE-EXIT
1995 PM PEAK BUILD REVISED NETWORK
date: 05-08-1989 time: 19:40:53

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	LT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	1.000	0.950	1516
WB	RT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	0.850	1.000	1357
SB	TH	1800	2	1.000	1.000	1.000	1.000	1.000	0.900	1.000	1.000	3240

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	LT	592	1516	0.39	0.59	899	0.66	*
WB	RT	237	1357	0.17	0.59	805	0.29	
SB	TH	583	3240	0.18	0.27	886	0.66	*

CYCLE= 60.0 LOST= 8.0 SUM V/S CRIT= 0.57 TOTAL V/C= 0.66

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	LT	0.66	*	0.59	60.0	6.19	899	1.41	1.00	7.60	B	4.0	13
WB	RT	0.29		0.59	60.0	4.57	805	0.00	0.85	3.88	A	1.6	6
SB	TH	0.66	*	0.27	60.0	14.68	886	1.43	0.85	13.69	B	6.7	21

DIR	STREET	DELAY	LOS
WB	AVE DE LAFAYETTE	6.54	B
SB	GARAGE ENT/EXIT	13.69	B

INTERSECTION DELAY = 9.49 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

AVE DE LAFAYETTE/HARRISON AVE EXT/GARAGE ENTRANCE-EXIT
1995 SAT PEAK BUILD REVISED NETWORK
Date: 05-08-1989 Time: 19:39:36

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME= GEOMETRICS= SIGNAL=

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	30
WB	AVE DE LAFAYETTE	407	0	252	659	1	0	1	12.0	0.0	12.0	30
NB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	30
SB	GARAGE ENT/EXIT	0	240	0	240	0	2	0	0.0	12.0	0.0	30

TOTAL VOLUME = 899

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	0.0%	N	0	0	.000	100	Y	14.5	3
WB	0.0%	3.0%	N	0	0	.900	100	Y	14.5	3
NB	0.0%	3.0%	N	0	0	.000	100	Y	14.5	3
SB	0.0%	0.0%	N	0	0	.900	100	Y	14.5	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1					*		*										40.3	4	A
2														*			11.7	4	A

CYCLE= 60.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	407	0	252	.900	452	0	280
NB	0	0	0	.000	0	0	0
SB	0	240	0	.900	0	267	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
WB	LT	452	1	1.00	452	1.00	0.00
WB	RT	280	1	1.00	280	0.00	1.00
SB	TH	267	2	1.05	280	0.00	0.00

AVE DE LAFAYETTE/HARRISON AVE EXT/GARAGE ENTRANCE-EXIT
1995 SAT PEAK BUILD REVISED NETWORK
date: 05-08-1989 time: 19:39:37

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	LT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	1.000	0.950	1516
WB	RT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	0.850	1.000	1357
SB	TH	1800	2	1.000	1.000	1.000	1.000	1.000	0.900	1.000	1.000	3240

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	LT	452	1516	0.30	0.67	1019	0.44	*
WB	RT	280	1357	0.21	0.67	912	0.31	
SB	TH	280	3240	0.09	0.19	631	0.44	*

CYCLE= 60.0 LOST= 8.0 SUM V/S CRIT= 0.38 TOTAL V/C= 0.44

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	LT	0.44	*	0.67	60.0	3.50	1019	0.00	1.00	3.50	A	2.5	8
WB	RT	0.31		0.67	60.0	3.09	912	0.00	0.85	2.63	A	1.5	5
SB	TH	0.44	*	0.19	60.0	16.18	631	0.00	0.85	13.76	B	3.6	12

DIR	STREET	DELAY	LOS
WB	AVE DE LAFAYETTE	3.16	A
SB	GARAGE ENT/EXIT	13.76	B

INTERSECTION DELAY = 6.09 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

AVE DE LAFAYETTE/HARRISON AVE EXT/GARAGE ENTRANCE-EXIT
1995 AM PEAK BUILD EXISTING NETWORK
Date: 05-08-1989 Time: 19:43:47

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME= GEOMETRICS= SIGNAL=

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	30
WB	AVE DE LAFAYETTE	181	0	515	696	1	0	1	12.0	0.0	12.0	30
NB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	30
SB	GARAGE ENT/EXIT	0	80	0	80	0	2	0	0.0	12.0	0.0	30

TOTAL VOLUME = 776

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	0.0%	N	0	0	.000	100	Y	14.5	3
WB	0.0%	3.0%	N	0	0	.900	100	Y	14.5	3
NB	0.0%	3.0%	N	0	0	.000	100	Y	14.5	3
SB	0.0%	0.0%	N	0	0	.900	100	Y	14.5	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1					*		*										48.7	4	A
2														*			3.3	4	A

CYCLE= 60.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	181	0	515	.900	201	0	572
NB	0	0	0	.000	0	0	0
SB	0	80	0	.900	0	89	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
WB	LT	201	1	1.00	201	1.00	0.00
WB	RT	572	1	1.00	572	0.00	1.00
SB	TH	89	2	1.05	93	0.00	0.00

AVE DE LAFAYETTE/HARRISON AVE EXT/GARAGE ENTRANCE-EXIT
1995 AM PEAK BUILD EXISTING NETWORK
date: 05-08-1989 time: 19:43:48

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	LT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	1.000	0.950	1516
WB	RT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	0.850	1.000	1357
SB	TH	1800	2	1.000	1.000	1.000	1.000	1.000	0.900	1.000	1.000	3240

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	LT	201	1516	0.13	0.81	1230	0.16	
WB	RT	572	1357	0.42	0.81	1101	0.52	*
SB	TH	93	3240	0.03	0.06	180	0.52	*

CYCLE= 60.0 LOST= 8.0 SUM V/S CRIT= 0.45 TOTAL V/C= 0.52

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	LT	0.16		0.81	60.0	0.94	1230	0.00	1.00	0.94	A	0.6	3
WB	RT	0.52	*	0.81	60.0	1.40	1101	0.10	0.85	1.28	A	1.8	6
SB	TH	0.52	*	0.06	60.0	20.95	180	0.64	0.85	18.35	C	1.4	5

DIR	STREET	DELAY	LOS
WB	AVE DE LAFAYETTE	1.19	A
SB	GARAGE ENT/EXIT	18.35	C

INTERSECTION DELAY = 3.04 INTERSECTION LOS=A

THE EXISTING TIMING IS OPTIMAL

AVE DE LAFAYETTE/HARRISON AVE EXT/GARAGE ENTRANCE-EXIT
1995 PM PEAK BUILD EXISTING NETWORK
Date: 05-08-1989 Time: 19:45:44

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME= GEOMETRICS= SIGNAL=

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	30
WB	AVE DE LAFAYETTE	339	0	230	569	1	0	1	12.0	0.0	12.0	30
NB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	30
SB	GARAGE ENT/EXIT	0	500	0	500	0	2	0	0.0	12.0	0.0	30

TOTAL VOLUME = 1069

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	0.0%	N	0	0	.000	100	Y	14.5	3
WB	0.0%	3.0%	N	0	0	.900	100	Y	14.5	3
NB	0.0%	3.0%	N	0	0	.000	100	Y	14.5	3
SB	0.0%	0.0%	N	0	0	.900	100	Y	14.5	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1					*		*										30.1	4	A
2														*			21.9	4	A

CYCLE= 60.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	339	0	230	.900	377	0	256
NB	0	0	0	.000	0	0	0
SB	0	500	0	.900	0	556	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
WB	LT	377	1	1.00	377	1.00	0.00
WB	RT	256	1	1.00	256	0.00	1.00
SB	TH	556	2	1.05	583	0.00	0.00

AVE DE LAFAYETTE/HARRISON AVE EXT/GARAGE ENTRANCE-EXIT
1995 PM PEAK BUILD EXISTING NETWORK
date: 05-08-1989 time: 19:45:45

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	LT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	1.000	0.950	1516
WB	RT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	0.850	1.000	1357
SB	TH	1800	2	1.000	1.000	1.000	1.000	1.000	0.900	1.000	1.000	3240

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	LT	377	1516	0.25	0.50	762	0.49	*
WB	RT	256	1357	0.19	0.50	682	0.37	
SB	TH	583	3240	0.18	0.36	1180	0.49	*

CYCLE= 60.0 LOST= 8.0 SUM V/S CRIT= 0.43 TOTAL V/C= 0.49

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	LT	0.49	*	0.50	60.0	7.51	762	0.00	1.00	7.51	B	3.1	10
WB	RT	0.37		0.50	60.0	6.95	682	0.00	0.85	5.91	B	2.1	7
SB	TH	0.49	*	0.36	60.0	11.24	1180	0.00	0.85	9.56	B	5.9	19

DIR	STREET	DELAY	LOS
WB	AVE DE LAFAYETTE	6.86	B
SB	GARAGE ENT/EXIT	9.56	B

INTERSECTION DELAY = 8.15 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

AVE DE LAFAYETTE/HARRISON AVE EXT/GARAGE ENTRANCE-EXIT
1995 SAT PEAK BUILD EXISTING NETWORK
Date: 05-08-1989 Time: 19:47:30

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME= GEOMETRICS= SIGNAL=

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	30
WB	AVE DE LAFAYETTE	296	0	274	570	1	0	1	12.0	0.0	12.0	30
NB	-	0	0	0	0	0	0	0	0.0	0.0	0.0	30
SB	GARAGE ENT/EXIT	0	240	0	240	0	2	0	0.0	12.0	0.0	30

TOTAL VOLUME = 810

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	0.0%	N	0	0	.000	100	Y	14.5	3
WB	0.0%	3.0%	N	0	0	.900	100	Y	14.5	3
NB	0.0%	3.0%	N	0	0	.000	100	Y	14.5	3
SB	0.0%	0.0%	N	0	0	.900	100	Y	14.5	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1					*		*										37.5	4	A
2														*			14.5	4	A

CYCLE= 60.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	296	0	274	.900	329	0	304
NB	0	0	0	.000	0	0	0
SB	0	240	0	.900	0	267	0

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
WB	LT	329	1	1.00	329	1.00	0.00
WB	RT	304	1	1.00	304	0.00	1.00
SB	TH	267	2	1.05	280	0.00	0.00

AVE DE LAFAYETTE/HARRISON AVE EXT/GARAGE ENTRANCE-EXIT
1995 SAT PEAK BUILD EXISTING NETWORK
date: 05-08-1989 time: 19:47:31

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	LT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	1.000	0.950	1516
WB	RT	1800	1	1.000	0.985	1.000	1.000	1.000	0.900	0.850	1.000	1357
SB	TH	1800	2	1.000	1.000	1.000	1.000	1.000	0.900	1.000	1.000	3240

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	LT	329	1516	0.22	0.63	949	0.35	
WB	RT	304	1357	0.22	0.63	849	0.36	*
SB	TH	280	3240	0.09	0.24	781	0.36	*

CYCLE= 60.0 LOST= 8.0 SUM V/S CRIT= 0.31 TOTAL V/C= 0.36

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	LT	0.35		0.63	60.0	4.08	949	0.00	1.00	4.08	A	2.1	7
WB	RT	0.36	*	0.63	60.0	4.12	849	0.00	0.85	3.50	A	1.9	7
SB	TH	0.36	*	0.24	60.0	14.38	781	0.00	0.85	12.22	B	3.4	11

DIR	STREET	DELAY	LOS
WB	AVE DE LAFAYETTE	3.80	A
SB	GARAGE ENT/EXIT	12.22	B

INTERSECTION DELAY = 6.38 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

HARRISON AVE/STUART ST/KNEELAND ST
1995 NO BUILD AM PEAK EXISTING NETWORK WITH MITIGATION
Date: 05-08-1989 Time: 20:59:20

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=11AM GEOMETRICS=11AM SIGNAL=11AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

DIR	STREET	VOLUMES LT	TH	RT	TOTAL	# OF LANES LT	TH	RT	LANE WIDTH LT	TH	RT	CROSS WALK
EB	STUART ST	0	768	80	848	0	2	1	0.0	11.0	11.0	60
WB	KNEELAND ST	76	949	0	1025	0	3	0	0.0	11.0	0.0	60
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	26
SB	HARRISON AVE	115	125	150	390	0	2	0	0.0	12.0	0.0	26

TOTAL VOLUME = 2263

TRAFFIC & ROADWAY CONDITIONS

DIR	GRADE	%HV	ADJ PARK Y/N	MOVES	BUSES	PHF	PEDESTRIANS CROSS	BUT	MIN TIME	ARR TYPE
EB	0.0%	2.0%	Y	10	10	.960	200	Y	18.0	3
WB	0.0%	2.0%	Y	10	10	.960	200	Y	18.0	3
NB	0.0%	0.0%	N	0	0	.000	0		9.5	0
SB	0.0%	2.0%	Y	5	5	.960	200	Y	9.5	3

PHASINGS

	EASTBOUND l	t	r	p	WESTBOUND l	t	r	p	NORTHBOUND l	t	r	p	SOUTHBOUND l	t	r	p	GREEN	Y+R	PRE/ACT
1		*	*		*	*						*				*	46.9	4	A
2				*				*					*	*	*		25.1	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	768	80	.960	0	800	83
WB	76	949	0	.960	79	989	0
NB	0	0	0	.000	0	0	0
SB	115	125	150	.960	120	130	156

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	TH	800	2	1.05	840	0.00	0.00
EB	RT	83	1	1.00	83	0.00	1.00
WB	LT-TH	1068	3	1.10	1174	0.07	0.00
SB	LT-TH-RT	406	2	1.05	427	0.29	0.38

HARRISON AVE/STUART ST/KNEELAND ST
1995 NO BUILD AM PEAK EXISTING NETWORK WITH MITIGATION
date: 05-08-1989 time: 20:59:21

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3101
EB	RT	1800	1	0.967	0.990	1.000	0.849	0.958	0.900	0.850	1.000	1072
WB	LT-TH	1800	3	0.967	0.990	1.000	0.950	0.986	0.900	1.000	0.844	3676
SB	LT-TH-RT	1800	2	1.000	0.990	1.000	0.937	0.990	0.900	0.906	0.928	2500

SUPPLEMENTAL WORKSHEET FOR
LEFT-TURN ADJUSTMENT FACTOR FLT
INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	No	Vo	Plto	LGo
WB	80	47	3	1068	1068	79	0.07	2	800	0.00	0

CALCULATIONS

DIR	Sop	Yo	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
WB	3600	0.222	37.471	0.375	0.449	9.451	0.551	2.306	3.000	0.532	0.844

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH	840	3101	0.27	0.59	1819	0.46	
EB	RT	83	1072	0.08	0.59	629	0.13	
WB	LT-TH	1174	3676	0.32	0.59	2156	0.54	*
SB	LT-TH-RT	427	2500	0.17	0.31	784	0.54	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.49 TOTAL V/C= 0.54

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH	0.46		0.59	80.0	7.13	1819	0.00	0.85	6.06	B	7.4	23
EB	RT	0.13		0.59	80.0	5.64	629	0.00	0.85	4.79	A	0.8	3
WB	LT-TH	0.54	*	0.59	80.0	7.64	2156	0.13	0.85	6.60	B	9.8	30
SB	LT-TH-RT	0.54	*	0.31	80.0	17.28	784	0.34	0.85	14.98	B	6.2	20

DIR	STREET	DELAY	LOS
EB	STUART ST	5.94	B
WB	KNEELAND ST	6.60	B
SB	HARRISON AVE	14.98	B

INTERSECTION DELAY = 7.78 INTERSECTION LOS=B

for chosen cycle length 80.0
suggested timing phase 1 is 46.9 secs green, 4.0 secs yellow + red clear
suggested timing phase 2 is 25.1 secs green, 4.0 secs yellow + red clear

HARRISON AVE/STUART ST/KNEELAND ST
1995 NO BUILD PM PEAK WITH EXISTING NETWORK WITH MITIGATION
Date: 05-08-1989 Time: 21:01:16

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=11PM GEOMETRICS=11PM SIGNAL=11PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	STAURT ST	0	885	79	964	0	2	1	0.0	11.0	11.0	60
WB	KNEELAND ST	84	956	0	1040	0	3	0	0.0	11.0	0.0	60
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	26
SB	HARRISON AVE	298	234	186	718	0	2	0	0.0	12.0	0.0	26

TOTAL VOLUME = 2722

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	Y	10	10	.950	200	Y	18.0	3
WB	0.0%	2.0%	Y	10	10	.950	200	Y	18.0	3
NB	0.0%	0.0%	N	0	0	.000	0		9.5	0
SB	0.0%	2.0%	Y	5	5	.950	200	Y	9.5	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1		*	*		*	*						*				*	38.0	4	A
2				*				*					*	*	*		34.0	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	885	79	.950	0	932	83
WB	84	956	0	.950	88	1006	0
NB	0	0	0	.000	0	0	0
SB	298	234	186	.950	314	246	196

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	TH	932	2	1.05	978	0.00	0.00
EB	RT	83	1	1.00	83	0.00	1.00
WB	LT-TH	1095	3	1.10	1204	0.08	0.00
SB	LT-TH-RT	756	2	1.05	794	0.42	0.26

HARRISON AVE/STUART ST/KNEELAND ST
1995 NO BUILD PM PEAK WITH EXISTING NETWORK WITH MITIGATION
date: 05-08-1989 time: 21:01:17

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3101
EB	RT	1800	1	0.967	0.990	1.000	0.849	0.958	0.900	0.850	1.000	1072
WB	LT-TH	1800	3	0.967	0.990	1.000	0.950	0.986	0.900	1.000	0.780	3396
SB	LT-TH-RT	1800	2	1.000	0.990	1.000	0.937	0.990	0.900	0.936	0.898	2503

SUPPLEMENTAL WORKSHEET FOR
LEFT-TURN ADJUSTMENT FACTOR FLT
INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	No	Vo	Plto	LGo
WB	80	38	3	1095	1095	88	0.08	2	932	0.00	0

CALCULATIONS

DIR	Sop	Yo	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
WB	3600	0.259	23.350	0.293	0.622	14.659	0.378	1.212	3.843	0.339	0.780

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH	978	3101	0.32	0.48	1473	0.66	
EB	RT	83	1072	0.08	0.48	509	0.16	
WB	LT-TH	1204	3396	0.35	0.48	1614	0.75	*
SB	LT-TH-RT	794	2503	0.32	0.42	1063	0.75	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.67 TOTAL V/C= 0.75

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH	0.66		0.48	80.0	12.23	1473	0.91	0.85	11.17	B	10.9	34
EB	RT	0.16		0.48	80.0	9.08	509	0.00	0.85	7.72	B	1.0	4
WB	LT-TH	0.75	*	0.48	80.0	12.98	1614	1.63	0.85	12.42	B	12.8	39
SB	LT-TH-RT	0.75	*	0.42	80.0	14.72	1063	2.46	0.85	14.61	B	9.7	30

DIR	STREET	DELAY	LOS
EB	STAURT ST	10.90	B
WB	KNEELAND ST	12.42	B
SB	HARRISON AVE	14.61	B

INTERSECTION DELAY = 12.46 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

HARRISON AVR/STUART ST/KNEELAND ST
1995 NO BUILD AM PEAK WITH REVISED NETWORK WITH MITIGATION
Date: 05-08-1989 Time: 21:06:28

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=11AM GEOMETRICS=11AM SIGNAL=11AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	STUART ST	0	768	80	848	0	2	1	0.0	11.0	11.0	60
WB	KNEELAND ST	76	768	0	844	0	3	0	0.0	11.0	0.0	60
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	26
SB	HARRISON AVE	111	71	89	271	0	2	0	0.0	12.0	0.0	26

TOTAL VOLUME = 1963

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	Y	10	10	.960	200	Y	18.0	3
WB	0.0%	2.0%	Y	10	10	.960	200	Y	18.0	3
NB	0.0%	0.0%	N	0	0	.000	0		9.5	0
SB	0.0%	2.0%	Y	5	5	.960	200	Y	9.5	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1		*	*		*	*						*				*	49.8	4	A
2				*				*					*	*	*		22.2	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	768	80	.960	0	800	83
WB	76	768	0	.960	79	800	0
NB	0	0	0	.000	0	0	0
SB	111	71	89	.960	116	74	93

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	TH	800	2	1.05	840	0.00	0.00
EB	RT	83	1	1.00	83	0.00	1.00
WB	LT-TH	879	3	1.10	967	0.09	0.00
SB	LT-TH-RT	282	2	1.05	296	0.41	0.33

HARRISON AVE/STUART ST/KNEELAND ST
1995 NO BUILD AM PEAK WITH REVISED NETWORK WITH MITIGATION
date: 05-08-1989 time: 21:06:29

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3101
EB	RT	1800	1	0.967	0.990	1.000	0.849	0.958	0.900	0.850	1.000	1072
WB	LT-TH	1800	3	0.967	0.990	1.000	0.950	0.986	0.900	1.000	0.831	3619
SB	LT-TH-RT	1800	2	1.000	0.990	1.000	0.937	0.990	0.900	0.919	0.900	2461

SUPPLEMENTAL WORKSHEET FOR
LEFT-TURN ADJUSTMENT FACTOR FLT
INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	No	Vo	Plto	LGo
WB	80	50	3	879	879	79	0.09	2	800	0.00	0

CALCULATIONS

DIR	Sop	Yo	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
WB	3600	0.222	41.222	0.375	0.540	8.617	0.460	1.645	3.000	0.493	0.831

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH	840	3101	0.27	0.62	1932	0.43	*
EB	RT	83	1072	0.08	0.62	668	0.12	
WB	LT-TH	967	3619	0.27	0.62	2255	0.43	
SB	LT-TH-RT	296	2461	0.12	0.28	682	0.43	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.39 TOTAL V/C= 0.43

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH	0.43	*	0.62	80.0	5.93	1932	0.00	0.85	5.04	B	6.7	21
EB	RT	0.12		0.62	80.0	4.69	668	0.00	0.85	3.98	A	0.7	3
WB	LT-TH	0.43		0.62	80.0	5.90	2255	0.00	0.85	5.01	B	7.4	23
SB	LT-TH-RT	0.43	*	0.28	80.0	18.07	682	0.00	0.85	15.36	C	4.5	15

DIR	STREET	DELAY	LOS
EB	STUART ST	4.94	A
WB	KNEELAND ST	5.01	B
SB	HARRISON AVE	15.36	C

INTERSECTION DELAY = 6.38 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

HARRISON AVE/STUART ST/KNEELAND ST

1995 NO BUILD PM PEAK WITH REVISED NETWORK WITH MITIGATION

Date: 05-08-1989 Time: 21:08:43

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=11PM GEOMETRICS=11PM SIGNAL=11PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	STUART ST	0	885	79	964	0	2	1	0.0	11.0	11.0	60
WB	KNEELAND ST	102	907	0	1009	0	3	0	0.0	11.0	0.0	60
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	26
SB	HARRISON AVE	258	170	114	542	0	2	0	0.0	12.0	0.0	26

TOTAL VOLUME = 2515

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	Y	10	10	.950	200	Y	18.0	3
WB	0.0%	2.0%	Y	10	10	.950	200	Y	18.0	3
NB	0.0%	0.0%	N	0	0	.000	0		9.5	0
SB	0.0%	2.0%	Y	5	5	.950	200	Y	9.5	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1		*	*		*	*						*				*	42.5	4	A
2				*				*					*	*	*		29.5	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	885	79	.950	0	932	83
WB	102	907	0	.950	107	955	0
NB	0	0	0	.000	0	0	0
SB	258	170	114	.950	272	179	120

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	TH	932	2	1.05	978	0.00	0.00
EB	RT	83	1	1.00	83	0.00	1.00
WB	LT-TH	1062	3	1.10	1168	0.10	0.00
SB	LT-TH-RT	571	2	1.05	599	0.48	0.21

HARRISON AVE/STUART ST/KNEELAND ST

1995 NO BUILD PM PEAK WITH REVISED NETWORK WITH MITIGATION

date: 05-08-1989 time: 21:08:44

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3101
EB	RT	1800	1	0.967	0.990	1.000	0.849	0.958	0.900	0.850	1.000	1072
WB	LT-TH	1800	3	0.967	0.990	1.000	0.950	0.986	0.900	1.000	0.773	3365
SB	LT-TH-RT	1800	2	1.000	0.990	1.000	0.937	0.990	0.900	0.948	0.883	2492

SUPPLEMENTAL WORKSHEET FOR

LEFT-TURN ADJUSTMENT FACTOR FLT

INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	No	Vo	Plto	LGo
WB	80	43	3	1062	1062	107	0.10	2	932	0.00	0

CALCULATIONS

DIR	Sop	Yo	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
WB	3600	0.259	29.451	0.293	0.756	13.081	0.244	0.644	3.843	0.318	0.773

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH	978	3101	0.32	0.53	1649	0.59	
EB	RT	83	1072	0.08	0.53	570	0.15	
WB	LT-TH	1168	3365	0.35	0.53	1789	0.65	*
SB	LT-TH-RT	599	2492	0.24	0.37	918	0.65	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.59 TOTAL V/C= 0.65

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH	0.59		0.53	80.0	9.74	1649	0.38	0.85	8.61	B	9.7	30
EB	RT	0.15		0.53	80.0	7.23	570	0.00	0.85	6.14	B	0.9	3
WB	LT-TH	0.65	*	0.53	80.0	10.21	1789	0.68	0.85	9.26	B	11.1	34
SB	LT-TH-RT	0.65	*	0.37	80.0	15.97	918	1.31	0.85	14.68	B	8.0	25

DIR	STREET	DELAY	LOS
EB	STUART ST	8.41	B
WB	KNEELAND ST	9.26	B
SB	HARRISON AVE	14.68	B

INTERSECTION DELAY = 10.09 INTERSECTION LOS=B

for chosen cycle length 80.0

suggested timing phase 1 is 42.5 secs green, 4.0 secs yellow + red clear

suggested timing phase 2 is 29.5 secs green, 4.0 secs yellow + red clear

HARRISON AVE/STUART ST/KNEELAND ST
1995 BUILD AM PEAK EXISTING NETWORK WITH MITIGATION
Date: 05-08-1989 Time: 21:11:22

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=11AM GEOMETRICS=11AM SIGNAL=11AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	STUART ST	0	768	80	848	0	2	1	0.0	11.0	11.0	60
WB	KNEELAND ST	76	949	0	1025	0	3	0	0.0	11.0	0.0	60
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	26
SB	HARRISON AVE	137	128	153	418	0	2	0	0.0	12.0	0.0	26

TOTAL VOLUME = 2291

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	Y	10	10	.960	200	Y	18.0	3
WB	0.0%	2.0%	Y	10	10	.960	200	Y	18.0	3
NB	0.0%	0.0%	N	0	0	.000	0		9.5	0
SB	0.0%	2.0%	Y	5	5	.960	200	Y	9.5	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1		*	*		*	*						*				*	45.8	4	A
2				*				*					*	*	*		26.2	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	768	80	.960	0	800	83
WB	76	949	0	.960	79	989	0
NB	0	0	0	.000	0	0	0
SB	137	128	153	.960	143	133	159

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	TH	800	2	1.05	840	0.00	0.00
EB	RT	83	1	1.00	83	0.00	1.00
WB	LT-TH	1068	3	1.10	1174	0.07	0.00
SB	LT-TH-RT	435	2	1.05	457	0.33	0.37

HARRISON AVE/STUART ST/KNEELAND ST
1995 BUILD AM PEAK EXISTING NETWORK WITH MITIGATION
date: 05-08-1989 time: 21:11:23

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3101
EB	RT	1800	1	0.967	0.990	1.000	0.849	0.958	0.900	0.850	1.000	1072
WB	LT-TH	1800	3	0.967	0.990	1.000	0.950	0.986	0.900	1.000	0.842	3669
SB	LT-TH-RT	1800	2	1.000	0.990	1.000	0.937	0.990	0.900	0.910	0.920	2491

SUPPLEMENTAL WORKSHEET FOR
LEFT-TURN ADJUSTMENT FACTOR FLT
INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	No	Vo	Plto	LGo
WB	80	46	3	1068	1068	79	0.07	2	800	0.00	0

CALCULATIONS

DIR	Sop	Yo	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
WB	3600	0.222	35.976	0.375	0.451	9.783	0.549	2.302	3.000	0.527	0.842

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH	840	3101	0.27	0.57	1774	0.47	
EB	RT	83	1072	0.08	0.57	613	0.14	
WB	LT-TH	1174	3669	0.32	0.57	2099	0.56	*
SB	LT-TH-RT	457	2491	0.18	0.33	817	0.56	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.50 TOTAL V/C= 0.56

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH	0.47		0.57	80.0	7.64	1774	0.00	0.85	6.49	B	7.6	24
EB	RT	0.14		0.57	80.0	6.04	613	0.00	0.85	5.13	B	0.8	3
WB	LT-TH	0.56	*	0.57	80.0	8.19	2099	0.18	0.85	7.11	B	10.2	31
SB	LT-TH-RT	0.56	*	0.33	80.0	16.81	817	0.46	0.85	14.68	B	6.5	20

DIR	STREET	DELAY	LOS
EB	STUART ST	6.37	B
WB	KNEELAND ST	7.11	B
SB	HARRISON AVE	14.68	B

INTERSECTION DELAY = 8.20 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

HARRISON AVE/STUART ST/KNEELAND ST
1995 BUILD PM PEAK WITH EXISTING NETWORK WITH MITIGATION
Date: 05-08-1989 Time: 21:13:30

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=11PM GEOMETRICS=11PM SIGNAL=11PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	STAURT ST	0	885	79	964	0	2	1	0.0	11.0	11.0	60
WB	KNEELAND ST	84	956	0	1040	0	3	0	0.0	11.0	0.0	60
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	26
SB	HARRISON AVE	419	248	193	860	0	2	0	0.0	12.0	0.0	26

TOTAL VOLUME = 2864

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	Y	10	10	.950	200	Y	18.0	3
WB	0.0%	2.0%	Y	10	10	.950	200	Y	18.0	3
NB	0.0%	0.0%	N	0	0	.000	0		9.5	0
SB	0.0%	2.0%	Y	5	5	.950	200	Y	9.5	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1		*	*		*	*						*				*	34.7	4	A
2				*				*					*	*	*		37.3	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	885	79	.950	0	932	83
WB	84	956	0	.950	88	1006	0
NB	0	0	0	.000	0	0	0
SB	419	248	193	.950	441	261	203

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	TH	932	2	1.05	978	0.00	0.00
EB	RT	83	1	1.00	83	0.00	1.00
WB	LT-TH	1095	3	1.10	1204	0.08	0.00
SB	LT-TH-RT	905	2	1.05	951	0.49	0.22

HARRISON AVE/STUART ST/KNEELAND ST
1995 BUILD PM PEAK WITH EXISTING NETWORK WITH MITIGATION
date: 05-08-1989 time: 21:13:31

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3101
EB	RT	1800	1	0.967	0.990	1.000	0.849	0.958	0.900	0.850	1.000	1072
WB	LT-TH	1800	3	0.967	0.990	1.000	0.950	0.986	0.900	1.000	0.773	3369
SB	LT-TH-RT	1800	2	1.000	0.990	1.000	0.937	0.990	0.900	0.945	0.881	2476

SUPPLEMENTAL WORKSHEET FOR
LEFT-TURN ADJUSTMENT FACTOR FLT
INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	No	Vo	Plto	LGo
WB	80	35	3	1095	1095	88	0.08	2	932	0.00	0

CALCULATIONS

DIR	Sop	Yo	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
WB	3600	0.259	18.906	0.293	0.640	15.809	0.360	1.127	3.843	0.320	0.773

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH	978	3101	0.32	0.43	1346	0.73	
EB	RT	63	1072	0.08	0.43	465	0.18	
WB	LT-TH	1204	3369	0.36	0.43	1462	0.82	*
SB	LT-TH-RT	951	2476	0.38	0.47	1154	0.82	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.74 TOTAL V/C= 0.82

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH	0.73		0.43	80.0	14.23	1346	1.68	0.85	13.52	B	11.7	36
EB	RT	0.18		0.43	80.0	10.56	465	0.00	0.85	8.98	B	1.0	4
WB	LT-TH	0.82	*	0.43	80.0	15.16	1462	3.30	0.85	15.69	C	13.6	42
SB	LT-TH-RT	0.82	*	0.47	80.0	14.07	1154	4.13	0.85	15.47	C	10.7	33

DIR	STREET	DELAY	LOS
EB	STAURT ST	13.17	B
WB	KNEELAND ST	15.69	C
SB	HARRISON AVE	15.47	C

INTERSECTION DELAY = 14.79 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

HARRISON AVE/STUART ST/KNEELAND ST
1995 BUILD AM PEAK WITH REVISED NETWORK WITH MITIGATION
Date: 05-08-1989 Time: 21:15:11

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=11AM GEOMETRICS=11AM SIGNAL=11AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	STUART ST	0	768	80	848	0	2	1	0.0	11.0	11.0	60
WB	KNEELAND ST	76	768	0	844	0	3	0	0.0	11.0	0.0	60
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	26
SB	HARRISON AVE	133	74	92	299	0	2	0	0.0	12.0	0.0	26

TOTAL VOLUME = 1991

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	Y	10	10	.960	200	Y	18.0	3
WB	0.0%	2.0%	Y	10	10	.960	200	Y	18.0	3
NB	0.0%	0.0%	N	0	0	.000	0		9.5	0
SB	0.0%	2.0%	Y	5	5	.960	200	Y	9.5	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1		*	*		*	*						*				*	48.2	4	A
2				*				*					*	*	*		23.8	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	768	80	.960	0	800	83
WB	76	768	0	.960	79	800	0
NB	0	0	0	.000	0	0	0
SB	133	74	92	.960	139	77	96

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	TH	800	2	1.05	840	0.00	0.00
EB	RT	83	1	1.00	83	0.00	1.00
WB	LT-TH	879	3	1.10	967	0.09	0.00
SB	LT-TH-RT	311	2	1.05	327	0.44	0.31

HARRISON AVR/STUART ST/KNEELAND ST
1995 BUILD AM PEAK WITH REVISED NETWORK WITH MITIGATION
date: 05-08-1989 time: 21:15:12

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3101
EB	RT	1800	1	0.967	0.990	1.000	0.849	0.958	0.900	0.850	1.000	1072
WB	LT-TH	1800	3	0.967	0.990	1.000	0.950	0.986	0.900	1.000	0.829	3611
SB	LT-TH-RT	1800	2	1.000	0.990	1.000	0.937	0.990	0.900	0.925	0.891	2451

SUPPLEMENTAL WORKSHEET FOR
LEFT-TURN ADJUSTMENT FACTOR FLT
INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	No	Vo	Plto	LGo
WB	80	48	3	879	879	79	0.09	2	800	0.00	0

CALCULATIONS

DIR	Sop	Yo	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
WB	3600	0.222	39.162	0.375	0.543	9.075	0.457	1.636	3.000	0.487	0.829

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH	840	3101	0.27	0.60	1870	0.45	*
EB	RT	83	1072	0.08	0.60	647	0.13	
WB	LT-TH	967	3611	0.27	0.60	2178	0.44	
SB	LT-TH-RT	327	2451	0.13	0.30	728	0.45	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.40 TOTAL V/C= 0.45

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH	0.45	*	0.60	80.0	6.57	1670	0.00	0.85	5.59	B	7.1	22
EB	RT	0.13		0.60	80.0	5.20	647	0.00	0.85	4.42	A	0.7	3
WB	LT-TH	0.44		0.60	80.0	6.54	2178	0.00	0.85	5.56	B	7.8	24
SB	LT-TH-RT	0.45	*	0.30	80.0	17.34	728	0.00	0.85	14.74	B	4.9	16

DIR	STREET	DELAY	LOS
EB	STUART ST	5.48	B
WB	KNEELAND ST	5.56	B
SB	HARRISON AVE	14.74	B

INTERSECTION DELAY = 6.88 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

HARRISON AVE/STUART ST/KNEELAND ST
1995 BUILD PM PEAK WITH REVISED NETWORK WITH MITIGATION
Date: 05-08-1989 Time: 21:16:54

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=11PM GEOMETRICS=11PM SIGNAL=11PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	STUART ST	0	885	79	964	0	2	1	0.0	11.0	11.0	60
WB	KNEELAND ST	102	907	0	1009	0	3	0	0.0	11.0	0.0	60
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	26
SB	HARRISON AVE	379	184	128	691	0	2	0	0.0	12.0	0.0	26

TOTAL VOLUME = 2664

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	Y	10	10	.950	200	Y	18.0	3
WB	0.0%	2.0%	Y	10	10	.950	200	Y	18.0	3
NB	0.0%	0.0%	N	0	0	.000	0		9.5	0
SB	0.0%	2.0%	Y	5	5	.950	200	Y	9.5	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1		*	*		*	*						*				*	38.1	4	A
2				*				*					*	*	*		33.9	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	885	79	.950	0	932	83
WB	102	907	0	.950	107	955	0
NB	0	0	0	.000	0	0	0
SB	379	184	128	.950	399	194	135

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	TH	932	2	1.05	978	0.00	0.00
EB	RT	83	1	1.00	83	0.00	1.00
WB	LT-TH	1062	3	1.10	1168	0.10	0.00
SB	LT-TH-RT	727	2	1.05	764	0.55	0.19

HARRISON AVE/STUART ST/KNEELAND ST
1995 BUILD PM PEAK WITH REVISED NETWORK WITH MITIGATION
date: 05-08-1989 time: 21:16:55

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3101
EB	RT	1800	1	0.967	0.990	1.000	0.849	0.958	0.900	0.850	1.000	1072
WB	LT-TH	1800	3	0.967	0.990	1.000	0.950	0.986	0.900	1.000	0.767	3340
SB	LT-TH-RT	1800	2	1.000	0.990	1.000	0.937	0.990	0.900	0.955	0.865	2458

SUPPLEMENTAL WORKSHEET FOR
LEFT-TURN ADJUSTMENT FACTOR FLT
INPUT VARIABLES

DIR	C	G	N	Va	Vm	Vlt	Plt	No	Vo	Plto	LGo
WB	80	38	3	1062	1062	107	0.10	2	932	0.00	0

CALCULATIONS

DIR	Sop	Yo	Gu	Fs	Pl	Gq	Pt	Gf	El	Fm	Flt
WB	3600	0.259	23.516	0.293	0.778	14.617	0.222	0.570	3.843	0.300	0.767

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	TH	978	3101	0.32	0.48	1478	0.66	
EB	RT	83	1072	0.08	0.48	511	0.16	
WB	LT-TH	1168	3340	0.35	0.48	1592	0.73	*
SB	LT-TH-RT	764	2458	0.31	0.42	1041	0.73	*

CYCLE= 80.0 LOST= 8.0 SUM V/S CRIT= 0.66 TOTAL V/C= 0.73

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	TH	0.66		0.48	80.0	12.16	1478	0.89	0.85	11.09	B	10.8	33
EB	RT	0.16		0.48	80.0	9.03	511	0.00	0.85	7.67	B	1.0	4
WB	LT-TH	0.73	*	0.48	80.0	12.81	1592	1.50	0.85	12.16	B	12.4	38
SB	LT-TH-RT	0.73	*	0.42	80.0	14.67	1041	2.28	0.85	14.41	B	9.3	29

DIR	STREET	DELAY	LOS
EB	STUART ST	10.83	B
WB	KNEELAND ST	12.16	B
SB	HARRISON AVE	14.41	B

INTERSECTION DELAY = 12.26 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

KINGSTON ST/BEDFORD ST
1995 NO BUILD AM PEAK WITH EXISTING NETWORK
Date: 05-08-1989 Time: 22:40:59

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME= GEOMETRICS= SIGNAL=

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	BEDFORD ST	0	0	150	150	0	0	1	0.0	0.0	12.0	30
WB	BEDFORD ST	123	292	0	415	1	1	0	11.0	11.0	0.0	30
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	KINGSTON ST	0	219	107	326	0	1	0	0.0	11.0	0.0	30

TOTAL VOLUME = 891

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	3.0%	N	0	10	.870	100	Y	14.5	3
WB	0.0%	3.0%	N	0	10	.870	100	Y	14.5	3
NB	0.0%	0.0%	N	0	0	.000	0		10.5	0
SB	0.0%	3.0%	N	0	10	.870	100	Y	10.5	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1			*		*	*										*	22.3	4	A
2								*						*	*		29.7	4	A

CYCLE= 60.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	150	.870	0	0	172
WB	123	292	0	.870	141	336	0
NB	0	0	0	.000	0	0	0
SB	0	219	107	.870	0	252	123

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	RT	172	1	1.00	172	0.00	1.00
WB	LT	141	1	1.00	141	1.00	0.00
WB	TH	336	1	1.00	336	0.00	0.00
SB	TH-RT	375	1	1.00	375	0.00	0.33

KINGSTON ST/BEDFORD ST
1995 NO BUILD AM PEAK WITH EXISTING NETWORK
date: 05-08-1989 time: 22:41:00

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	RT	1800	1	1.000	0.985	1.000	1.000	0.958	0.900	0.850	1.000	1300
WB	LT	1800	1	0.967	0.985	1.000	1.000	1.000	0.900	1.000	0.950	1466
WB	TH	1800	1	0.967	0.985	1.000	1.000	0.958	0.900	1.000	1.000	1479
SB	TH-RT	1800	1	0.967	0.985	1.000	1.000	0.958	0.900	0.840	1.000	1242

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	RT	172	1300	0.13	0.37	484	0.36	
WB	LT	141	1466	0.10	0.37	545	0.26	
WB	TH	336	1479	0.23	0.37	550	0.61	*
SB	TH-RT	375	1242	0.30	0.49	614	0.61	*

CYCLE= 60.0 LOST= 8.0 SUM V/S CRIT= 0.53 TOTAL V/C= 0.61

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	RT	0.36		0.37	60.0	10.36	484	0.00	0.85	8.81	B	1.8	6
WB	LT	0.26		0.37	60.0	9.95	545	0.00	1.00	9.95	B	1.5	5
WB	TH	0.61	*	0.37	60.0	11.63	550	1.40	0.85	11.08	B	3.5	11
SB	TH-RT	0.61	*	0.49	60.0	8.34	614	1.26	0.85	8.16	B	3.2	10

DIR	STREET	DELAY	LOS
EB	BEDFORD ST	8.81	B
WB	BEDFORD ST	10.74	B
SB	KINGSTON ST	8.16	B

INTERSECTION DELAY = 9.47 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

KINGSTON ST/BEDFORD ST

1995 NO BUILD PM PEAK WITH EXISTING NETWORK

Date: 05-08-1989 Time: 22:42:25

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME= GEOMETRICS= SIGNAL=

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	BEDFORD ST	0	0	174	174	0	0	1	0.0	0.0	12.0	30
WB	BEDFORD ST	130	155	0	285	1	1	0	11.0	11.0	0.0	30
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	KINGSTON ST	0	382	166	548	0	1	0	0.0	11.0	0.0	30

TOTAL VOLUME = 1007

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	3.0%	N	0	10	.870	100	Y	14.5	3
WB	0.0%	3.0%	N	0	10	.870	100	Y	14.5	3
NB	0.0%	0.0%	N	0	0	.000	0		10.5	0
SB	0.0%	3.0%	N	0	10	.870	100	Y	10.5	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1			*		*	*										*	12.2	4	A
2								*						*	*		39.8	4	A

CYCLE= 60.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	174	.870	0	0	200
WB	130	155	0	.870	149	178	0
NB	0	0	0	.000	0	0	0
SB	0	382	166	.870	0	439	191

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	RT	200	1	1.00	200	0.00	1.00
WB	LT	149	1	1.00	149	1.00	0.00
WB	TH	178	1	1.00	178	0.00	0.00
SB	TH-RT	630	1	1.00	630	0.00	0.30

KINGSTON ST/BEDFORD ST

1995 NO BUILD PM PEAK WITH EXISTING NETWORK

date: 05-08-1989 time: 22:42:26

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	RT	1800	1	1.000	0.985	1.000	1.000	0.958	0.900	0.850	1.000	1300
WB	LT	1800	1	0.967	0.985	1.000	1.000	1.000	0.900	1.000	0.950	1466
WB	TH	1800	1	0.967	0.985	1.000	1.000	0.958	0.900	1.000	1.000	1479
SB	TH-RT	1800	1	0.967	0.985	1.000	1.000	0.958	0.900	0.845	1.000	1249

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	RT	200	1300	0.15	0.20	263	0.76	*
WB	LT	149	1466	0.10	0.20	297	0.50	
WB	TH	178	1479	0.12	0.20	300	0.59	
SB	TH-RT	630	1249	0.50	0.66	829	0.76	*

CYCLE= 60.0 LOST= 8.0 SUM V/S CRIT= 0.66 TOTAL V/C= 0.76

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	RT	0.76	*	0.20	60.0	17.13	263	10.11	0.85	23.16	C	3.0	10
WB	LT	0.50		0.20	60.0	16.14	297	0.06	1.00	16.21	C	2.0	7
WB	TH	0.59		0.20	60.0	16.49	300	2.13	0.85	15.82	C	2.4	8
SB	TH-RT	0.76	*	0.66	60.0	5.19	829	3.46	0.85	7.35	B	3.5	11

DIR	STREET	DELAY	LOS
EB	BEDFORD ST	23.16	C
WB	BEDFORD ST	16.00	C
SB	KINGSTON ST	7.35	B

INTERSECTION DELAY = 12.53 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

KINGSTON ST/BEDFORD ST

1995 NO BUILD SATB PEAK WITH EXISTING NETWORK

Date: 05-08-1989 Time: 22:43:40

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME= GEOMETRICS= SIGNAL=

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	BEDFORD ST	0	0	132	132	0	0	1	0.0	0.0	12.0	30
WB	BEDFORD ST	92	145	0	237	1	1	0	11.0	11.0	0.0	30
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	KINGSTON ST	0	248	197	445	0	1	0	0.0	11.0	0.0	30

TOTAL VOLUME = 814

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	3.0%	N	0	10	.870	100	Y	14.5	3
WB	0.0%	3.0%	N	0	10	.870	100	Y	14.5	3
NB	0.0%	0.0%	N	0	0	.000	0		10.5	0
SB	0.0%	3.0%	N	0	10	.870	100	Y	10.5	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1			*		*	*										*	11.3	4	A
2								*						*	*		40.7	4	A

CYCLE= 60.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	132	.870	0	0	152
WB	92	145	0	.870	106	167	0
NB	0	0	0	.000	0	0	0
SB	0	248	197	.870	0	285	226

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	RT	152	1	1.00	152	0.00	1.00
WB	LT	106	1	1.00	106	1.00	0.00
WB	TH	167	1	1.00	167	0.00	0.00
SB	TH-RT	511	1	1.00	511	0.00	0.44

KINGSTON ST/BEDFORD ST
1995 NO BUILD SATB PEAK WITH EXISTING NETWORK
date: 05-08-1989 time: 22:43:41

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	RT	1800	1	1.000	0.985	1.000	1.000	0.958	0.900	0.850	1.000	1300
WB	LT	1800	1	0.967	0.985	1.000	1.000	1.000	0.900	1.000	0.950	1466
WB	TH	1800	1	0.967	0.985	1.000	1.000	0.958	0.900	1.000	1.000	1479
SB	TH-RT	1800	1	0.967	0.985	1.000	1.000	0.958	0.900	0.819	1.000	1211

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	RT	152	1300	0.12	0.19	244	0.62	*
WB	LT	106	1466	0.07	0.19	275	0.38	
WB	TH	167	1479	0.11	0.19	277	0.60	
SB	TH-RT	511	1211	0.42	0.68	822	0.62	*

CYCLE= 60.0 LOST= 8.0 SUM V/S CRIT= 0.54 TOTAL V/C= 0.62

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	RT	0.62	*	0.19	60.0	17.03	244	3.56	0.85	17.51	C	2.1	7
WB	LT	0.38		0.19	60.0	16.22	275	0.00	1.00	16.22	C	1.4	5
WB	TH	0.60		0.19	60.0	16.96	277	2.47	0.85	16.52	C	2.3	8
SB	TH-RT	0.62	*	0.68	60.0	4.07	822	1.08	0.85	4.37	A	2.7	9

DIR	STREET	DELAY	LOS
EB	BEDFORD ST	17.51	C
WB	BEDFORD ST	16.40	C
SB	KINGSTON ST	4.37	A

INTERSECTION DELAY = 10.00 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

KINGSTON ST/BEDFORD ST

1995 BUILD AM PEAK WITH EXISTING NETWORK

Date: 05-08-1989 Time: 22:45:42

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME= GEOMETRICS= SIGNAL=

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	BEDFORD ST	0	0	179	179	0	0	1	0.0	0.0	12.0	30
WB	BEDFORD ST	123	548	0	671	1	1	0	11.0	11.0	0.0	30
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	KINGSTON ST	0	219	248	467	0	1	0	0.0	11.0	0.0	30

TOTAL VOLUME = 1317

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	3.0%	N	0	10	.870	100	Y	14.5	3
WB	0.0%	3.0%	N	0	10	.870	100	Y	14.5	3
NB	0.0%	0.0%	N	0	0	.000	0		10.5	0
SB	0.0%	3.0%	N	0	10	.870	100	Y	10.5	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1			*		*	*										*	25.2	4	A
2								*					*	*			26.8	4	A

CYCLE= 60.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	179	.870	0	0	206
WB	123	548	0	.870	141	630	0
NB	0	0	0	.000	0	0	0
SB	0	219	248	.870	0	252	285

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	RT	206	1	1.00	206	0.00	1.00
WB	LT	141	1	1.00	141	1.00	0.00
WB	TH	630	1	1.00	630	0.00	0.00
SB	TH-RT	537	1	1.00	537	0.00	0.53

KINGSTON ST/BEDFORD ST
1995 BUILD AM PEAK WITH EXISTING NETWORK
date: 05-08-1989 time: 22:45:43

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	RT	1800	1	1.000	0.985	1.000	1.000	0.958	0.900	0.850	1.000	1300
WB	LT	1800	1	0.967	0.985	1.000	1.000	1.000	0.900	1.000	0.950	1466
WB	TH	1800	1	0.967	0.985	1.000	1.000	0.958	0.900	1.000	1.000	1479
SB	TH-RT	1800	1	0.967	0.985	1.000	1.000	0.958	0.900	0.803	1.000	1187

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	RT	206	1300	0.16	0.42	547	0.38	
WB	LT	141	1466	0.10	0.42	616	0.23	
WB	TH	630	1479	0.43	0.42	622	1.01	*
SB	TH-RT	537	1187	0.45	0.45	530	1.01	*

CYCLE= 60.0 LOST= 8.0 SUM V/S CRIT= 0.88 TOTAL V/C= 1.01

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	RT	0.38		0.42	60.0	9.10	547	0.00	0.85	7.73	B	2.0	7
WB	LT	0.23		0.42	60.0	8.48	616	0.00	1.00	8.48	B	1.4	5
WB	TH	1.01	*	0.42	60.0	13.34	622	30.49	0.85	37.26	D	11.5	35
SB	TH-RT	1.01	*	0.45	60.0	12.76	530	32.83	0.85	38.75	D	10.0	31

DIR	STREET	DELAY	LOS
EB	BEDFORD ST	7.73	B
WB	BEDFORD ST	31.98	D
SB	KINGSTON ST	38.75	D

INTERSECTION DELAY = 31.09 INTERSECTION LOS=D

THE EXISTING TIMING IS OPTIMAL

KINGSTON ST/BEDFORD ST

1995 BUILD PM PEAK WITH EXISTING NETWORK

Date: 05-08-1989 Time: 22:47:41

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME= GEOMETRICS= SIGNAL=

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	BEDFORD ST	0	0	330	330	0	0	1	0.0	0.0	12.0	30
WB	BEDFORD ST	130	294	0	424	1	1	0	11.0	11.0	0.0	30
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	KINGSTON ST	0	382	262	644	0	1	0	0.0	11.0	0.0	30

TOTAL VOLUME = 1398

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	3.0%	N	0	10	.870	100	Y	14.5	3
WB	0.0%	3.0%	N	0	10	.870	100	Y	14.5	3
NB	0.0%	0.0%	N	0	0	.000	0		10.5	0
SB	0.0%	3.0%	N	0	10	.870	100	Y	10.5	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1			*		*	*										*	16.9	4	A
2								*						*	*		35.1	4	A

CYCLE= 60.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	330	.870	0	0	379
WB	130	294	0	.870	149	338	0
NB	0	0	0	.000	0	0	0
SB	0	382	262	.870	0	439	301

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	RT	379	1	1.00	379	0.00	1.00
WB	LT	149	1	1.00	149	1.00	0.00
WB	TH	338	1	1.00	338	0.00	0.00
SB	TH-RT	740	1	1.00	740	0.00	0.41

KINGSTON ST/BEDFORD ST
1995 BUILD PM PEAK WITH EXISTING NETWORK
date: 05-08-1989 time: 22:47:42

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	RT	1800	1	1.000	0.985	1.000	1.000	0.958	0.900	0.850	1.000	1300
WB	LT	1800	1	0.967	0.985	1.000	1.000	1.000	0.900	1.000	0.950	1466
WB	TH	1800	1	0.967	0.985	1.000	1.000	0.958	0.900	1.000	1.000	1479
SB	TH-RT	1800	1	0.967	0.985	1.000	1.000	0.958	0.900	0.826	1.000	1221

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	RT	379	1300	0.29	0.28	366	1.04	*
WB	LT	149	1466	0.10	0.28	413	0.36	
WB	TH	338	1479	0.23	0.28	416	0.81	
SB	TH-RT	740	1221	0.61	0.59	714	1.04	*

CYCLE= 60.0 LOST= 8.0 SUM V/S CRIT= 0.90 TOTAL V/C= 1.04

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	RT	1.04	*	0.28	60.0	16.62	366	44.25	0.85	51.73	E	9.4	29
WB	LT	0.36		0.28	60.0	13.10	413	0.00	1.00	13.10	B	1.8	6
WB	TH	0.81		0.28	60.0	15.26	416	9.60	0.85	21.13	C	4.6	15
SB	TH-RT	1.04	*	0.59	60.0	9.97	714	33.80	0.85	37.21	D	12.5	38

DIR	STREET	DELAY	LOS
EB	BEDFORD ST	51.73	E
WB	BEDFORD ST	18.67	C
SB	KINGSTON ST	37.21	D

INTERSECTION DELAY = 35.01 INTERSECTION LOS=D

THE EXISTING TIMING IS OPTIMAL

KINGSTON ST/BEDFORD ST

1995 BUILD SAT PEAK WITH EXISTING NETWORK

Date: 05-08-1989 Time: 22:48:51

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME= GEOMETRICS= SIGNAL=

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	BEDFORD ST	0	0	209	209	0	0	1	0.0	0.0	12.0	30
WB	BEDFORD ST	92	300	0	392	1	1	0	11.0	11.0	0.0	30
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	KINGSTON ST	0	248	304	552	0	1	0	0.0	11.0	0.0	30

TOTAL VOLUME = 1153

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	3.0%	N	0	10	.870	100	Y	14.5	3
WB	0.0%	3.0%	N	0	10	.870	100	Y	14.5	3
NB	0.0%	0.0%	N	0	0	.000	0		10.5	0
SB	0.0%	3.0%	N	0	10	.870	100	Y	10.5	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1			*		*	*										*	15.7	4	A
2								*						*	*		36.3	4	A

CYCLE= 60.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	209	.870	0	0	240
WB	92	300	0	.870	106	345	0
NB	0	0	0	.000	0	0	0
SB	0	248	304	.870	0	285	349

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	RT	240	1	1.00	240	0.00	1.00
WB	LT	106	1	1.00	106	1.00	0.00
WB	TH	345	1	1.00	345	0.00	0.00
SB	TH-RT	634	1	1.00	634	0.00	0.55

KINGSTON ST/BEDFORD ST
1995 BUILD SAT PEAK WITH EXISTING NETWORK
date: 05-08-1989 time: 22:48:52

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	RT	1800	1	1.000	0.985	1.000	1.000	0.958	0.900	0.850	1.000	1300
WB	LT	1800	1	0.967	0.985	1.000	1.000	1.000	0.900	1.000	0.950	1466
WB	TH	1800	1	0.967	0.985	1.000	1.000	0.958	0.900	1.000	1.000	1479
SB	TH-RT	1800	1	0.967	0.985	1.000	1.000	0.958	0.900	0.799	1.000	1182

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	RT	240	1300	0.18	0.26	341	0.70	
WB	LT	106	1466	0.07	0.26	385	0.27	
WB	TH	345	1479	0.23	0.26	388	0.89	*
SB	TH-RT	634	1182	0.54	0.60	714	0.89	*

CYCLE= 60.0 LOST= 8.0 SUM V/S CRIT= 0.77 TOTAL V/C= 0.89

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	RT	0.70		0.26	60.0	15.21	341	5.31	0.85	17.44	C	3.0	10
WB	LT	0.27		0.26	60.0	13.37	385	0.00	1.00	13.37	B	1.3	5
WB	TH	0.89	*	0.26	60.0	16.17	388	17.19	0.85	28.35	D	5.7	18
SB	TH-RT	0.89	*	0.60	60.0	7.71	714	10.59	0.85	15.56	C	5.7	18

DIR	STREET	DELAY	LOS
EB	BEDFORD ST	17.44	C
WB	BEDFORD ST	24.84	C
SB	KINGSTON ST	15.56	C

INTERSECTION DELAY = 19.05 INTERSECTION LOS=C

THE EXISTING TIMING IS OPTIMAL

KINGSTON ST/BEDFORD ST

1995 NO BUILD AM PEAK WITH REVISED NETWORK

Date: 05-08-1989 Time: 22:50:40

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME= GEOMETRICS= SIGNAL=

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	BEDFORD ST	0	0	150	150	0	0	1	0.0	0.0	12.0	30
WB	BEDFORD ST	123	271	0	394	1	1	0	11.0	11.0	0.0	30
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	KINGSTON ST	0	219	107	326	0	1	0	0.0	11.0	0.0	30

TOTAL VOLUME = 870

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	3.0%	N	0	10	.870	100	Y	14.5	3
WB	0.0%	3.0%	N	0	10	.870	100	Y	14.5	3
NB	0.0%	0.0%	N	0	0	.000	0		10.5	0
SB	0.0%	3.0%	N	0	10	.870	100	Y	10.5	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1			*		*	*										*	21.4	4	A
2								*						*	*		30.6	4	A

CYCLE= 60.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	150	.870	0	0	172
WB	123	271	0	.870	141	311	0
NB	0	0	0	.000	0	0	0
SB	0	219	107	.870	0	252	123

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	RT	172	1	1.00	172	0.00	1.00
WB	LT	141	1	1.00	141	1.00	0.00
WB	TH	311	1	1.00	311	0.00	0.00
SB	TH-RT	375	1	1.00	375	0.00	0.33

KINGSTON ST/BEDFORD ST
1995 NO BUILD AM PEAK WITH REVISED NETWORK
date: 05-08-1989 time: 22:50:41

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	RT	1800	1	1.000	0.985	1.000	1.000	0.958	0.900	0.850	1.000	1300
WB	LT	1800	1	0.967	0.985	1.000	1.000	1.000	0.900	1.000	0.950	1466
WB	TH	1800	1	0.967	0.985	1.000	1.000	0.958	0.900	1.000	1.000	1479
SB	TH-RT	1800	1	0.967	0.985	1.000	1.000	0.958	0.900	0.840	1.000	1242

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	RT	172	1300	0.13	0.36	463	0.37	
WB	LT	141	1466	0.10	0.36	522	0.27	
WB	TH	311	1479	0.21	0.36	527	0.59	*
SB	TH-RT	375	1242	0.30	0.51	634	0.59	*

CYCLE= 60.0 LOST= 8.0 SUM V/S CRIT= 0.51 TOTAL V/C= 0.59

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	RT	0.37		0.36	60.0	10.89	463	0.00	0.85	9.26	B	1.8	6
WB	LT	0.27		0.36	60.0	10.45	522	0.00	1.00	10.45	B	1.5	5
WB	TH	0.59	*	0.36	60.0	11.97	527	1.16	0.85	11.16	B	3.3	11
SB	TH-RT	0.59	*	0.51	60.0	7.83	634	0.97	0.85	7.48	B	3.1	10

DIR	STREET	DELAY	LOS
EB	BEDFORD ST	9.26	B
WB	BEDFORD ST	10.94	B
SB	KINGSTON ST	7.48	B

INTERSECTION DELAY = 9.35 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

KINGSTON ST/BEDFORD ST

1995 NO BUILD PM PEAK WITH REVISED NETWORK

Date: 05-08-1989 Time: 22:51:54

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME= GEOMETRICS= SIGNAL=

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	BEDFORD ST	0	0	184	184	0	0	1	0.0	0.0	12.0	30
WB	BEDFORD ST	130	155	0	285	1	1	0	11.0	11.0	0.0	30
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	KINGSTON ST	0	382	165	547	0	1	0	0.0	11.0	0.0	30

TOTAL VOLUME = 1016

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	3.0%	N	0	10	.870	100	Y	14.5	3
WB	0.0%	3.0%	N	0	10	.870	100	Y	14.5	3
NB	0.0%	0.0%	N	0	0	.000	0		10.5	0
SB	0.0%	3.0%	N	0	10	.870	100	Y	10.5	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1			*		*	*										*	12.7	4	A
2								*						*	*		39.3	4	A

CYCLE= 60.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	184	.870	0	0	211
WB	130	155	0	.870	149	178	0
NB	0	0	0	.000	0	0	0
SB	0	382	165	.870	0	439	190

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	RT	211	1	1.00	211	0.00	1.00
WB	LT	149	1	1.00	149	1.00	0.00
WB	TH	178	1	1.00	178	0.00	0.00
SB	TH-RT	629	1	1.00	629	0.00	0.30

KINGSTON ST/BEDFORD ST

1995 NO BUILD PM PEAK WITH REVISED NETWORK

date: 05-08-1989 time: 22:51:55

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	RT	1800	1	1.000	0.985	1.000	1.000	0.958	0.900	0.850	1.000	1300
WB	LT	1800	1	0.967	0.985	1.000	1.000	1.000	0.900	1.000	0.950	1466
WB	TH	1800	1	0.967	0.985	1.000	1.000	0.958	0.900	1.000	1.000	1479
SB	TH-RT	1800	1	0.967	0.985	1.000	1.000	0.958	0.900	0.845	1.000	1249

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	RT	211	1300	0.16	0.21	275	0.77	*
WB	LT	149	1466	0.10	0.21	310	0.48	
WB	TH	178	1479	0.12	0.21	313	0.57	
SB	TH-RT	629	1249	0.50	0.65	818	0.77	*

CYCLE= 60.0 LOST= 8.0 SUM V/S CRIT= 0.67 TOTAL V/C= 0.77

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	RT	0.77	*	0.21	60.0	16.92	275	10.33	0.85	23.16	C	3.2	10
WB	LT	0.48		0.21	60.0	15.78	310	0.00	1.00	15.78	C	2.0	7
WB	TH	0.57		0.21	60.0	16.11	313	1.41	0.85	14.89	B	2.3	8
SB	TH-RT	0.77	*	0.65	60.0	5.46	818	3.75	0.85	7.83	B	3.6	12

DIR	STREET	DELAY	LOS
EB	BEDFORD ST	23.16	C
WB	BEDFORD ST	15.29	C
SB	KINGSTON ST	7.83	B

INTERSECTION DELAY = 12.70 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

KINGSTON ST/BEDFORD ST

1995 NO BUILD SAT PEAK WITH REVISED NETWORK

Date: 05-08-1989 Time: 22:53:45

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME= GEOMETRICS= SIGNAL=

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	BEDFORD ST	0	0	132	132	0	0	1	0.0	0.0	12.0	30
WB	BEDFORD ST	92	135	0	227	1	1	0	11.0	11.0	0.0	30
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	KINGSTON ST	0	248	195	443	0	1	0	0.0	11.0	0.0	30

TOTAL VOLUME = 802

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	3.0%	N	0	10	.870	100	Y	14.5	3
WB	0.0%	3.0%	N	0	10	.870	100	Y	14.5	3
NB	0.0%	0.0%	N	0	0	.000	0		10.5	0
SB	0.0%	3.0%	N	0	10	.870	100	Y	10.5	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1			*		*	*										*	11.3	4	A
2								*						*	*		40.7	4	A

CYCLE= 60.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	132	.870	0	0	152
WB	92	135	0	.870	106	155	0
NB	0	0	0	.000	0	0	0
SB	0	248	195	.870	0	285	224

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	RT	152	1	1.00	152	0.00	1.00
WB	LT	106	1	1.00	106	1.00	0.00
WB	TH	155	1	1.00	155	0.00	0.00
SB	TH-RT	509	1	1.00	509	0.00	0.44

KINGSTON ST/BEDFORD ST
1995 NO BUILD SAT PEAK WITH REVISED NETWORK
date: 05-08-1989 time: 22:53:46

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	RT	1800	1	1.000	0.985	1.000	1.000	0.958	0.900	0.850	1.000	1300
WB	LT	1800	1	0.967	0.985	1.000	1.000	1.000	0.900	1.000	0.950	1466
WB	TH	1800	1	0.967	0.985	1.000	1.000	0.958	0.900	1.000	1.000	1479
SB	TH-RT	1800	1	0.967	0.985	1.000	1.000	0.958	0.900	0.820	1.000	1212

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	RT	152	1300	0.12	0.19	245	0.62	*
WB	LT	106	1466	0.07	0.19	276	0.38	
WB	TH	155	1479	0.10	0.19	279	0.56	
SB	TH-RT	509	1212	0.42	0.68	822	0.62	*

CYCLE= 60.0 LOST= 8.0 SUM V/S CRIT= 0.54 TOTAL V/C= 0.62

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	RT	0.62	*	0.19	60.0	17.00	245	3.46	0.85	17.39	C	2.1	7
WB	LT	0.38		0.19	60.0	16.19	276	0.00	1.00	16.19	C	1.4	5
WB	TH	0.56		0.19	60.0	16.78	279	1.27	0.85	15.34	C	2.1	7
SB	TH-RT	0.62	*	0.68	60.0	4.07	822	1.05	0.85	4.35	A	2.7	9

DIR	STREET	DELAY	LOS
EB	BEDFORD ST	17.39	C
WB	BEDFORD ST	15.68	C
SB	KINGSTON ST	4.35	A

INTERSECTION DELAY = 9.71 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

KINGSTON ST/BEDFORD ST

1995 BUILD AM PEAK WITH REVISED NETWORK

Date: 05-08-1989 Time: 22:55:51

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME= GEOMETRICS= SIGNAL=

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	BEDFORD ST	0	0	179	179	0	0	1	0.0	0.0	12.0	30
WB	BEDFORD ST	123	375	0	498	1	1	0	11.0	11.0	0.0	30
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	KINGSTON ST	0	219	223	442	0	1	0	0.0	11.0	0.0	30

TOTAL VOLUME = 1119

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	3.0%	N	0	10	.870	100	Y	14.5	3
WB	0.0%	3.0%	N	0	10	.870	100	Y	14.5	3
NB	0.0%	0.0%	N	0	0	.000	0		10.5	0
SB	0.0%	3.0%	N	0	10	.870	100	Y	10.5	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1			*		*	*										*	21.1	4	A
2								*						*	*		30.9	4	A

CYCLE= 60.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	179	.870	0	0	206
WB	123	375	0	.870	141	431	0
NB	0	0	0	.000	0	0	0
SB	0	219	223	.870	0	252	256

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	RT	206	1	1.00	206	0.00	1.00
WB	LT	141	1	1.00	141	1.00	0.00
WB	TH	431	1	1.00	431	0.00	0.00
SB	TH-RT	508	1	1.00	508	0.00	0.50

KINGSTON ST/BEDFORD ST
1995 BUILD AM PEAK WITH REVISED NETWORK
date: 05-08-1989 time: 22:55:52

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	RT	1800	1	1.000	0.985	1.000	1.000	0.958	0.900	0.850	1.000	1300
WB	LT	1800	1	0.967	0.985	1.000	1.000	1.000	0.900	1.000	0.950	1466
WB	TH	1800	1	0.967	0.985	1.000	1.000	0.958	0.900	1.000	1.000	1479
SB	TH-RT	1800	1	0.967	0.985	1.000	1.000	0.958	0.900	0.808	1.000	1194

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	RT	206	1300	0.16	0.35	458	0.45	
WB	LT	141	1466	0.10	0.35	517	0.27	
WB	TH	431	1479	0.29	0.35	521	0.83	*
SB	TH-RT	508	1194	0.43	0.51	614	0.83	*

CYCLE= 60.0 LOST= 8.0 SUM V/S CRIT= 0.72 TOTAL V/C= 0.83

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	RT	0.45		0.35	60.0	11.36	458	0.00	0.85	9.65	B	2.2	8
WB	LT	0.27		0.35	60.0	10.58	517	0.00	1.00	10.58	B	1.5	5
WB	TH	0.83	*	0.35	60.0	13.49	521	8.77	0.85	18.92	C	5.3	17
SB	TH-RT	0.83	*	0.51	60.0	9.36	614	7.57	0.85	14.39	B	4.7	15

DIR	STREET	DELAY	LOS
EB	BEDFORD ST	9.65	B
WB	BEDFORD ST	16.86	C
SB	KINGSTON ST	14.39	B

INTERSECTION DELAY = 14.73 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

KINGSTON ST/BEDFORD ST

1995 BUILD PM PEAK WITH REVISED NETWORK

Date: 05-08-1989 Time: 22:57:27

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME= GEOMETRICS= SIGNAL=

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	BEDFORD ST	0	0	340	340	0	0	1	0.0	0.0	12.0	30
WB	BEDFORD ST	130	212	0	342	1	1	0	11.0	11.0	0.0	30
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	KINGSTON ST	0	382	229	611	0	1	0	0.0	11.0	0.0	30

TOTAL VOLUME = 1293

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	3.0%	N	0	10	.870	100	Y	14.5	3
WB	0.0%	3.0%	N	0	10	.870	100	Y	14.5	3
NB	0.0%	0.0%	N	0	0	.000	0		10.5	0
SB	0.0%	3.0%	N	0	10	.870	100	Y	10.5	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1			*		*	*										*	17.9	4	A
2								*						*	*		34.1	4	A

CYCLE= 60.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	340	.870	0	0	391
WB	130	212	0	.870	149	244	0
NB	0	0	0	.000	0	0	0
SB	0	382	229	.870	0	439	263

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	RT	391	1	1.00	391	0.00	1.00
WB	LT	149	1	1.00	149	1.00	0.00
WB	TH	244	1	1.00	244	0.00	0.00
SB	TH-RT	702	1	1.00	702	0.00	0.37

KINGSTON ST/BEDFORD ST
1995 BUILD PM PEAK WITH REVISED NETWORK
date: 05-08-1989 time: 22:57:28

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	RT	1800	1	1.000	0.985	1.000	1.000	0.958	0.900	0.850	1.000	1300
WB	LT	1800	1	0.967	0.985	1.000	1.000	1.000	0.900	1.000	0.950	1466
WB	TH	1800	1	0.967	0.985	1.000	1.000	0.958	0.900	1.000	1.000	1479
SB	TH-RT	1800	1	0.967	0.985	1.000	1.000	0.958	0.900	0.832	1.000	1230

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	RT	391	1300	0.30	0.30	389	1.01	*
WB	LT	149	1466	0.10	0.30	438	0.34	
WB	TH	244	1479	0.16	0.30	442	0.55	
SB	TH-RT	702	1230	0.57	0.57	698	1.01	*

CYCLE= 60.0 LOST= 8.0 SUM V/S CRIT= 0.87 TOTAL V/C= 1.01

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	RT	1.01	*	0.30	60.0	16.03	389	36.35	0.85	44.52	E	8.6	27
WB	LT	0.34		0.30	60.0	12.48	438	0.00	1.00	12.48	B	1.7	6
WB	TH	0.55		0.30	60.0	13.42	442	0.72	0.85	12.02	B	2.8	9
SB	TH-RT	1.01	*	0.57	60.0	9.93	698	27.39	0.85	31.72	D	10.6	33

DIR	STREET	DELAY	LOS
EB	BEDFORD ST	44.52	E
WB	BEDFORD ST	12.19	B
SB	KINGSTON ST	31.72	D

INTERSECTION DELAY = 29.92 INTERSECTION LOS=D

THE EXISTING TIMING IS OPTIMAL

KINGSTON ST/BEDFORD ST

1995 BUILD SAT PEAK WITH REVISED NETWORK

Date: 05-08-1989 Time: 22:58:37

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME= GEOMETRICS= SIGNAL=

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	BEDFORD ST	0	0	209	209	0	0	1	0.0	0.0	12.0	30
WB	BEDFORD ST	92	198	0	290	1	1	0	11.0	11.0	0.0	30
NB		0	0	0	0	0	0	0	0.0	0.0	0.0	0
SB	KINGSTON ST	0	248	265	513	0	1	0	0.0	11.0	0.0	30

TOTAL VOLUME = 1012

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	3.0%	N	0	10	.870	100	Y	14.5	3
WB	0.0%	3.0%	N	0	10	.870	100	Y	14.5	3
NB	0.0%	0.0%	N	0	0	.000	0		10.5	0
SB	0.0%	3.0%	N	0	10	.870	100	Y	10.5	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1			*		*	*										*	14.1	4	A
2								*						*	*		37.9	4	A

CYCLE= 60.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	209	.870	0	0	240
WB	92	198	0	.870	106	228	0
NB	0	0	0	.000	0	0	0
SB	0	248	265	.870	0	285	305

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
EB	RT	240	1	1.00	240	0.00	1.00
WB	LT	106	1	1.00	106	1.00	0.00
WB	TH	228	1	1.00	228	0.00	0.00
SB	TH-RT	590	1	1.00	590	0.00	0.52

KINGSTON ST/BEDFORD ST
1995 BUILD SAT PEAK WITH REVISED NETWORK
date: 05-08-1989 time: 22:58:38

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
EB	RT	1800	1	1.000	0.985	1.000	1.000	0.958	0.900	0.850	1.000	1300
WB	LT	1800	1	0.967	0.985	1.000	1.000	1.000	0.900	1.000	0.950	1466
WB	TH	1800	1	0.967	0.985	1.000	1.000	0.958	0.900	1.000	1.000	1479
SB	TH-RT	1800	1	0.967	0.985	1.000	1.000	0.958	0.900	0.806	1.000	1191

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
EB	RT	240	1300	0.18	0.24	306	0.78	*
WB	LT	106	1466	0.07	0.24	345	0.31	
WB	TH	228	1479	0.15	0.24	348	0.65	
SB	TH-RT	590	1191	0.49	0.63	752	0.78	*

CYCLE= 60.0 LOST= 8.0 SUM V/S CRIT= 0.68 TOTAL V/C= 0.78

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
EB	RT	0.78	*	0.24	60.0	16.34	306	10.45	0.85	22.78	C	3.5	11
WB	LT	0.31		0.24	60.0	14.36	345	0.00	1.00	14.36	B	1.3	5
WB	TH	0.65		0.24	60.0	15.75	348	3.42	0.85	16.29	C	2.9	10
SB	TH-RT	0.78	*	0.63	60.0	6.14	752	4.57	0.85	9.11	B	3.8	12

DIR	STREET	DELAY	LOS
EB	BEDFORD ST	22.78	C
WB	BEDFORD ST	15.66	C
SB	KINGSTON ST	9.11	B

INTERSECTION DELAY = 13.82 INTERSECTION LOS=B

THE EXISTING TIMING IS OPTIMAL

CHAUNCY ST/AVE DE LAFAYETTE

1995 NO BUILD AM PEAK WITH REVISED NETWORK WITH MITIGATION

Date: 05-08-1989 Time: 21:56:26

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=15AM GEOMETRICS=15AM SIGNAL=15AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	AVE DE LAFAYETTE	0	0	0	0	0	0	0	0.0	0.0	0.0	0
WB	AVE DE LAFAYETTE	0	308	24	332	0	2	1	0.0	11.0	10.0	44
NB	CHAUNCY ST	169	435	0	604	1	1	0	11.0	10.0	0.0	40
SB	CHAUNCY ST	0	0	152	152	0	0	1	0.0	0.0	14.0	36

TOTAL VOLUME = 1088

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.000	15		11.0	3
WB	0.0%	2.0%	Y	10	10	.900	180	N	11.0	3
NB	0.0%	2.0%	Y	10	20	.900	100	N	13.0	3
SB	0.0%	2.0%	N	0	25	.900	310	N	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1								*				*			*		13.7	3	A
2						*	*					*				*	12.3	3	A
3			*					*	*	*							44.0	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	0	308	24	.900	0	342	27
NB	169	435	0	.900	188	483	0
SB	0	0	152	.900	0	0	169

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
WB	TH	342	2	1.05	359	0.00	0.00
WB	RT	27	1	1.00	27	0.00	1.00
NB	LT	188	1	1.00	188	1.00	0.00
NB	TH	483	1	1.00	483	0.00	0.00
SB	RT	169	1	1.00	169	0.00	1.00

CHAUNCY ST/AVE DE LAFAYETTE

1995 NO BUILD AM PEAK WITH REVISED NETWORK WITH MITIGATION

date: 05-08-1989 time: 21:56:27

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3101
WB	RT	1800	1	0.933	0.990	1.000	0.849	0.958	0.900	0.702	1.000	856
NB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1473
NB	TH	1800	1	0.933	0.990	1.000	0.849	0.917	0.900	1.000	1.000	1165
SB	RT	1800	1	1.067	0.990	1.000	1.000	0.896	0.900	0.850	1.000	1303

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	TH	359	3101	0.12	0.15	476	0.75	*
WB	RT	27	856	0.03	0.15	131	0.20	
NB	LT	188	1473	0.13	0.55	810	0.23	
NB	TH	483	1165	0.41	0.55	640	0.75	*
SB	RT	169	1303	0.13	0.17	224	0.75	*

CYCLE= 80.0 LOST=10.0 SUM V/S CRIT= 0.66 TOTAL V/C= 0.75

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	TH	0.75	*	0.15	80.0	24.64	476	5.66	0.85	25.75	D	6.4	20
WB	RT	0.20		0.15	80.0	22.48	131	0.00	0.85	19.11	C	0.5	2
NB	LT	0.23		0.55	80.0	7.07	810	0.00	1.00	7.07	B	1.9	7
NB	TH	0.75	*	0.55	80.0	10.54	640	4.27	0.85	12.59	B	4.8	15
SB	RT	0.75	*	0.17	80.0	23.96	224	11.33	0.85	30.00	D	3.4	11

DIR	STREET	DELAY	LOS
WB	AVE DE LAFAYETTE	25.29	D
NB	CHAUNCY ST	11.04	B
SB	CHAUNCY ST	30.00	D

INTERSECTION DELAY = 18.14 INTERSECTION LOS=C

THE EXISTING TIMING IS OPTIMAL

CHAUNCY ST/AVE DE LAFAYETTE

1995 NO BUILD PM PEAK WITH REVISED NETWORK WITH MITIGATION

Date: 05-08-1989 Time: 21:57:59

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=15PM GEOMETRICS=15PM SIGNAL=15PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	AVE DE LAFAYETTE	0	0	0	0	0	0	0	0.0	0.0	0.0	0
WB	AVE DE LAFAYETTE	0	268	62	330	0	2	1	0.0	11.0	10.0	44
NB	CHAUNCY ST	71	350	0	421	1	1	0	11.0	10.0	0.0	40
SB	CHAUNCY ST	0	0	230	230	0	0	1	0.0	0.0	14.0	36

TOTAL VOLUME = 981

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.000	15		11.0	3
WB	0.0%	2.0%	Y	10	10	.900	180	N	11.0	3
NB	0.0%	2.0%	Y	10	20	.900	100	N	13.0	3
SB	0.0%	2.0%	N	0	25	.900	310	N	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1								*				*			*		21.8	3	A
2						*	*					*				*	11.2	3	A
3				*				*	*	*							37.0	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	0	268	62	.900	0	298	69
NB	71	350	0	.900	79	389	0
SB	0	0	230	.900	0	0	256

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
WB	TH	298	2	1.05	313	0.00	0.00
WB	RT	69	1	1.00	69	0.00	1.00
NB	LT	79	1	1.00	79	1.00	0.00
NB	TH	389	1	1.00	389	0.00	0.00
SB	RT	256	1	1.00	256	0.00	1.00

CHAUNCY ST/AVE DE LAFAYETTE

1995 NO BUILD PM PEAK WITH REVISED NETWORK WITH MITIGATION

date: 05-08-1989 time: 21:58:01

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3101
WB	RT	1800	1	0.933	0.990	1.000	0.849	0.958	0.900	0.702	1.000	856
NB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1473
NB	TH	1800	1	0.933	0.990	1.000	0.849	0.917	0.900	1.000	1.000	1165
SB	RT	1800	1	1.067	0.990	1.000	1.000	0.896	0.900	0.850	1.000	1303

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	TH	313	3101	0.10	0.14	434	0.72	*
WB	RT	69	856	0.08	0.14	120	0.58	
NB	LT	79	1473	0.05	0.46	682	0.12	
NB	TH	389	1165	0.33	0.46	539	0.72	*
SB	RT	256	1303	0.20	0.27	354	0.72	*

CYCLE= 80.0 LOST=10.0 SUM V/S CRIT= 0.63 TOTAL V/C= 0.72

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	TH	0.72	*	0.14	80.0	25.01	434	4.81	0.85	25.35	D	5.7	18
WB	RT	0.58		0.14	80.0	24.46	120	4.02	0.85	24.21	C	1.3	5
NB	LT	0.12		0.46	80.0	9.26	682	0.00	1.00	9.26	B	0.9	4
NB	TH	0.72	*	0.46	80.0	13.16	539	3.90	0.85	14.50	B	4.6	15
SB	RT	0.72	*	0.27	80.0	20.04	354	5.83	0.85	21.99	C	4.1	13

DIR	STREET	DELAY	LOS
WB	AVE DE LAFAYETTE	25.14	D
NB	CHAUNCY ST	13.62	B
SB	CHAUNCY ST	21.99	C

INTERSECTION DELAY = 19.53 INTERSECTION LOS=C

THE EXISTING TIMING IS OPTIMAL

CHAUNCY ST/AVE DE LAFAYETTE

1995 BUILD AM PEAK WITH REVISED NETWORK WITH MITIGATION

Date: 05-08-1989 Time: 21:52:23

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0

LAST DATA SET NAMES LOADED OR SAVED

VOLUME=15AM GEOMETRICS=15AM SIGNAL=15AM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	AVE DE LAFAYETTE	0	0	0	0	0	0	0	0.0	0.0	0.0	0
WB	AVE DE LAFAYETTE	0	461	85	546	0	2	1	0.0	11.0	10.0	44
NB	CHAUNCY ST	261	520	0	781	1	1	0	11.0	10.0	0.0	40
SB	CHAUNCY ST	0	0	189	189	0	0	1	0.0	0.0	14.0	36

TOTAL VOLUME = 1516

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.000	15		11.0	3
WB	0.0%	2.0%	Y	10	10	.900	180	N	11.0	3
NB	0.0%	2.0%	Y	10	20	.900	100	N	13.0	3
SB	0.0%	2.0%	N	0	25	.900	310	N	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1								*				*			*		13.6	3	A
2						*	*					*				*	14.6	3	A
3			*					*	*	*							41.8	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET

PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	0	461	85	.900	0	512	94
NB	261	520	0	.900	290	578	0
SB	0	0	189	.900	0	0	210

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
WB	TH	512	2	1.05	538	0.00	0.00
WB	RT	94	1	1.00	94	0.00	1.00
NB	LT	290	1	1.00	290	1.00	0.00
NB	TH	578	1	1.00	578	0.00	0.00
SB	RT	210	1	1.00	210	0.00	1.00

CHAUNCY ST/AVE DE LAFAYETTE
1995 BUILD AM PEAK WITH REVISED NETWORK WITH MITIGATION
date: 05-08-1989 time: 21:52:25

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3101
WB	RT	1800	1	0.933	0.990	1.000	0.849	0.958	0.900	0.702	1.000	856
NB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1473
NB	TH	1800	1	0.933	0.990	1.000	0.849	0.917	0.900	1.000	1.000	1165
SB	RT	1800	1	1.067	0.990	1.000	1.000	0.896	0.900	0.850	1.000	1303

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	TH	538	3101	0.17	0.18	567	0.95	*
WB	RT	94	856	0.11	0.18	156	0.60	
NB	LT	290	1473	0.20	0.52	770	0.38	
NB	TH	578	1165	0.50	0.52	609	0.95	*
SB	RT	210	1303	0.16	0.17	221	0.95	*

CYCLE= 80.0 LOST=10.0 SUM V/S CRIT= 0.83 TOTAL V/C= 0.95

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	TH	0.95	*	0.18	80.0	24.57	567	20.13	0.85	38.00	D	11.7	36
WB	RT	0.60		0.18	80.0	22.83	156	4.51	0.85	23.24	C	1.7	6
NB	LT	0.38		0.52	80.0	8.63	770	0.00	1.00	8.63	B	3.1	10
NB	TH	0.95	*	0.52	80.0	13.75	609	19.21	0.85	28.02	D	8.9	28
SB	RT	0.95	*	0.17	80.0	24.98	221	36.18	0.85	51.98	E	5.9	19

DIR	STREET	DELAY	LOS
WB	AVE DE LAFAYETTE	35.79	D
NB	CHAUNCY ST	21.54	C
SB	CHAUNCY ST	51.98	E

INTERSECTION DELAY = 30.55 INTERSECTION LOS=D

THE EXISTING TIMING IS OPTIMAL

CHAUNCY ST/AVE DE LAFAYETTE
1995 BUILD PM PEAK WITH REVISED NETWORK WITH MITIGATION
Date: 05-08-1989 Time: 21:49:58

1985 HCM - CHAPTER 9: SIGNALIZED CINCH VERSION 2.0
LAST DATA SET NAMES LOADED OR SAVED
VOLUME=15PM GEOMETRICS=15PM SIGNAL=15PM

LOCATED IN CBD:Y

VOLUME & GEOMETRICS

		VOLUMES				# OF LANES			LANE WIDTH			CROSS
DIR	STREET	LT	TH	RT	TOTAL	LT	TH	RT	LT	TH	RT	WALK
EB	AVE DE LAFAYETTE	0	0	0	0	0	0	0	0.0	0.0	0.0	0
WB	AVE DE LAFAYETTE	0	353	96	449	0	2	1	0.0	11.0	10.0	44
NB	CHAUNCY ST	122	397	0	519	1	1	0	11.0	10.0	0.0	40
SB	CHAUNCY ST	0	0	282	282	0	0	1	0.0	0.0	14.0	36

TOTAL VOLUME = 1250

TRAFFIC & ROADWAY CONDITIONS

			ADJ PARK				PEDESTRIANS			ARR
DIR	GRADE	%HV	Y/N	MOVES	BUSES	PHF	CROSS	BUT	MIN TIME	TYPE
EB	0.0%	2.0%	N	0	10	.000	15		11.0	3
WB	0.0%	2.0%	Y	10	10	.900	180	N	11.0	3
NB	0.0%	2.0%	Y	10	20	.900	100	N	13.0	3
SB	0.0%	2.0%	N	0	25	.900	310	N	13.0	3

PHASINGS

	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				GREEN	Y+R	PRE/ACT
	l	t	r	p	l	t	r	p	l	t	r	p	l	t	r	p			
1								*				*			*		22.4	3	A
2						*	*					*				*	12.4	3	A
3			*					*	*	*							35.2	4	A

CYCLE= 80.0

VOLUME ADJUSTMENT WORKSHEET
PART 1 (MOVEMENT ADJUSTMENTS)

DIR	LTV	THV	RTV	PHF	LTFR	THFR	RTFR
EB	0	0	0	.000	0	0	0
WB	0	353	96	.900	0	392	107
NB	122	397	0	.900	136	441	0
SB	0	0	282	.900	0	0	313

PART 2 (LANE GROUP ADJUSTMENTS)

DIR	LN GROUP	FLOW	N	LU	v	Plt	Prt
WB	TH	392	2	1.05	412	0.00	0.00
WB	RT	107	1	1.00	107	0.00	1.00
NB	LT	136	1	1.00	136	1.00	0.00
NB	TH	441	1	1.00	441	0.00	0.00
SB	RT	313	1	1.00	313	0.00	1.00

CHAUNCY ST/AVE DE LAFAYETTE
1995 BUILD PM PEAK WITH REVISED NETWORK] WITH MITIGATION
date: 05-08-1989 time: 21:49:59

SATURATION FLOW ADJUSTMENT WORKSHEET

DIR	LN GROUP	IDEAL	N	Fwid	Fhv	Fgr	Fpark	Fbus	Farea	Frt	Flt	s
WB	TH	1800	2	0.967	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3101
WB	RT	1800	1	0.933	0.990	1.000	0.849	0.958	0.900	0.702	1.000	856
NB	LT	1800	1	0.967	0.990	1.000	1.000	1.000	0.900	1.000	0.950	1473
NB	TH	1800	1	0.933	0.990	1.000	0.849	0.917	0.900	1.000	1.000	1165
SB	RT	1800	1	1.067	0.990	1.000	1.000	0.896	0.900	0.850	1.000	1303

CAPACITY ANALYSIS WORKSHEET

DIR	LN GROUP	v	s	v/s	g/C	c	v/c	CRITICAL
WB	TH	412	3101	0.13	0.15	479	0.86	*
WB	RT	107	856	0.12	0.15	132	0.81	
NB	LT	136	1473	0.09	0.44	649	0.21	
NB	TH	441	1165	0.38	0.44	513	0.86	*
SB	RT	313	1303	0.24	0.28	365	0.86	*

CYCLE= 80.0 LOST=10.0 SUM V/S CRIT= 0.75 TOTAL V/C= 0.86

LEVEL OF SERVICE WORKSHEET

DIR	LN GROUP	v/c	CM	g/C	C	d1	c	d2	PF	Delay	LOS	Avg Q	95% Q
WB	TH	0.86	*	0.15	80.0	25.06	479	11.86	0.85	31.38	D	8.1	25
WB	RT	0.81		0.15	80.0	24.83	132	24.36	0.85	41.81	E	2.6	9
NB	LT	0.21		0.44	80.0	10.48	649	0.00	1.00	10.48	B	1.7	6
NB	TH	0.86	*	0.44	80.0	15.31	513	11.20	0.85	22.53	C	6.3	20
SB	RT	0.86	*	0.28	80.0	20.76	365	14.86	0.85	30.27	D	5.9	19

DIR	STREET	DELAY	LOS
WB	AVE DE LAFAYETTE	33.53	D
NB	CHAUNCY ST	19.70	C
SB	CHAUNCY ST	30.27	D

INTERSECTION DELAY = 27.14 INTERSECTION LOS=D

THE EXISTING TIMING IS OPTIMAL

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